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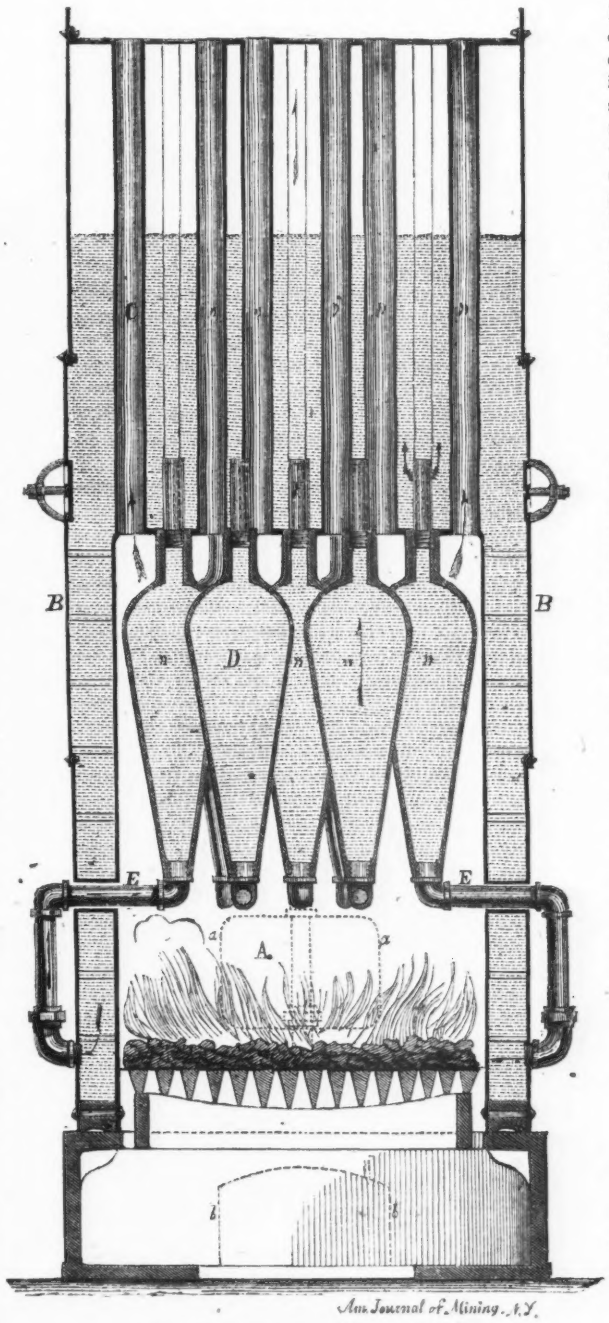
IMPROVED STEAM BOILER.

Our engraving this week illustrates the latest novelty in steam boilers. Gardner Symmes and T. W. Hayes, both of Brooklyn, N. Y., are the inventors. The patentees' improvement has, it will be noticed, reference to that description of steam boilers which are constructed, for at least a portion of their height, of a water jacket or shell, while their interior has arranged within, so as to intercept the fire and heated gases a series of water chambers or vessels, preferably mad e of cast iron, and constituting of themselves, though acting in concert with the surrounding jacket and body generally of the boiler, separate and distinct generators. In the engraving, B represents the outer shell which, in connection with the inner shell, constitutes a water-jacket surrounding the fire chamber, A, to which is a grate. Run up through the steam and water space are tubes, C. Within the fire chamber, A at a suitable height above the grate, and below th e crown sheet, is arranged a series of inverted holl ow cast iron cones or generators, D, sufficiently close to intercept the fire and heated gases in their passage through the tubes above to the smoke stack, without destroying the draught. These cones are separate and detached, and are connected at their bottom with the lower portion of the water jacket, B, by elbow-formed pipes, E, arranged to pass through sleeves or connecting pipes in the jacket and dipping downward outside the shell, B, while such cones are connected at their top with the steam and water-chamber by extensions passing through the crown sheet.

From this description, together with the engraving, it will be seen that by the disposition and shape of the generators, D, catching in a gradual manner the action of the flame and gases as they pass out through the tubes, giving a wide and easy passage to the flame as it strikes them and an abrupt relief to it at their tops, which prevents choking, a most effective steam-generating surface is obtained. Furthermore, by employing generators so arranged and connecting them by pipes, E, extending outwardly, not only is the fire box below the generators kept free and the water drawn for their supply from the lowest and coldest portions of the boiler and conveyed over the fire where it is hot, but by such attachment of the generators to the outer shell or case below, while they are supported above through their upper pipes by the crown sheet, the generators are most effectually held in their place. In making them, too, with their pipes separate and detached, the one from the other, not only is their safety augmented, but greater facility and convenience is afforded for putting the boiler together or taking it apart in case of necessary repair.

The manufacturers claim the following valuable features for this boiler: 1st. Superior workmanship in construction and quality of metal employed. 2d. A perfect water circulator, thereby preventing the formation of scale and explosions. 3d. The water, being of equal temperature in all parts, makes it a most perfect and speedy generator. 4th. The cones take the extreme heat from the crown sheet, which is high. 5th. Having fewer tubes, as compared with other boilers, it carries a greater quantity of water. 6th. By the admission of air to the fire-box, through the tubes at the side, the combustion of the gases is perfect. 7th. Does not foam. 8th. No masonry in the setting of the boiler is required. 9th. The boiler may be constructed in the locomotive form or otherwise. One of these boilers was lately employed by Mr. John A. Roebling in his operations, both in this city and Brooklyn, with reference to laying the foundation of the East River Bridge. It won for itself the highest praise. Further information may be had by addressing the manufacturers, Messrs. W. S. Fox & Co., 470 Water street, New York city.



Am. Journal of Mining, N.Y.

SYMMES' & HAYES' PATENT BOILER.

Ice in Deep Mines.

The main entrance to the pits at Dannemara (Persberg), one of the oldest and most celebrated of the Swedish iron mines, is a natural opening or abyss, of so large a circumference as to require some fifteen minutes to walk around its mouth. A scaffold is erected, so as to overhang this abyss, upon which the machinery is placed. The observer can look down into this frightful abyss upwards of five hundred feet, to which point the light of day extends, and beyond which all is shrouded in darkness, save when feebly illuminated by the dim lights of the miners. One of the most remarkable facts connected with this mine is the large quantity of ice which is always present there. Mons. R. G. von Leonhard, the author of an interesting work, entitled "Popular Lectures on Geology," says: "The deeper you go, the more the ice increases. And in order to remove it from the pits, it must be raised up in buckets. At some places the ice is ninety feet thick; it forms real glaciers, which are never diminished by any change of external temperature. This fact, however, should not be regarded as contradictory to another, which will hereafter be illustrated, and which is that pits become warmer in proportion to their depth. The phenomenon at Persberg, as we shall see, can be explained on natural principles. When the visitor has reached the bottom, he is conducted by his guide into vaulted chambers, through immense regions of ice. Many of these vaults are so large that fifty men can conveniently work in them at the same time." This occurrence of ice in deep mines is not an isolated field. Ice is found in the pits of Ehrenfriedensdorf, in Saxony. Leopold von Buch tells us that formerly, in Norway, mining was prosecuted above the region of eternal snow. Wood, for the timbering, could not be had there, and its want was supplied by filling up a drift with water and allowing it to freeze; passages were then cut through the ice as they were needed, the balance of the ice being left in lieu of wood for timbers. It is also well known that the ancient Peruvians obtained ores on the Cordilleras, in places elevated above the perpetual snow line. The mines of Rauris, in Upper Austria, lie entirely within the glacier region, and most of the shafts open in eternal ice, clear as crystal; the miners' huts are surrounded with ice. On what is known as Gold Mountain one of the shafts is sunk 100 feet through pure glacier ice. A gold mine in the deep valley of the Alps, near Saltzberg, is the highest in Europe which is now worked. There are two tunnels near this mine entirely surrounded with glacier ice. The miners of this region undergo great hardships from exposure to cold, and to avalanches, which often sweep them to destruction while going to and fro to their work, or while reposing in their cabins on the hillsides. It is stated by one authority that there is a locality deep within one of the iron mines of Dannemara, already noted, where the mass of ice is 120 yards thick.

Another Deep and Promising Mine.

The Gold Hill (Nevada) *News*, gives the following particulars relating to the Kearsarge mine: "The lower tunnel is twelve hundred feet below the croppings, which makes it the deepest silver or gold mine yet developed on the Pacific coast. Here, then, is a mass of mineral deposit, yielding in its lower level at the rate of $273 per ton, of twelve hundred feet in height to its croppings on the surface, several tons of which have yielded as high as $800 per ton! Located as the Kearsarge mine is, on the side of a high, steep mountain, the chances are that another tunnel, not over a quarter of a mile long, would pierce the ledge at a depth of eighteen hundred feet. But even allowing that the ledge should 'peter out' at the lower tunnel, there is still a rich and well-defined ledge of ore of twelve hundred feet in height, and eighteen hundred feet long—the surface croppings indicating *eleven* different and distinct ledges, running parallel for a considerable length, and all concentrating at what is known among miners as a 'chimney.' The Kearsarge mine is decidedly promising. Eleven thousand one hundred and sixty ounces of bullion in bars, the product of 40 tons of second-class ore, was recently received in Virginia City, being the first shipment since the mill and mine were started up in September."

Working Sulphurets.

A new method is described by the Grass Valley (California) *National*. The pans are about eighteen inches in diameter and fifteen inches high, and are driven by steam power. The sulphurets are worked just as they come from the rock, and do not require to be roasted. It is claimed by the owners of the Martin pan that they can work sulphurets at a third less expense than by using the Mnox pans, which are five feet in diameter. The working of the pans is very satisfactory, and it is the intention of the proprietors to put in several more of them. It only requires about three quarters of a cord of wood in twenty-four hours to run the five pans, and sufficient power can be obtained to keep about sixty pans going day and night. The pans were put up to do custom work, and have been constantly used for the past four months.

Gold Mining in Victoria.

Few persons are aware, says a London paper, when they read of the immense quantity of the precious metal that has reached England from Victoria, from how small a portion of the superficies of that colony the golden harvest has been extracted. And yet the six millions sterling that has been sent home for several years has been drawn from a very scurvy slice of the

district which is known to be auriferous. Mr. Selwyn, the Government Geologist, asserts that the total area occupied in Victoria by lower Paeæzoic auriferous formations, with their associate Plutonic rocks, including the district in which the overlying tertiaries and recent deposits do not exceed 350 feet, cannot be estimated at less than 41,813 square miles. Deducting 11,465 square miles occupied by granite and other plutonic rocks, that are not auriferous or only partially so, we ave an area of 30, 438 square miles, in any part of which there is a possibility of remunerative gold deposits being found, either in veins or in alluvial deposits. Of this superficies only 80¼ square miles, or about one thirty-third have been mined upon; and of the area under treatment only about one-sixth (or in other words about a two-hundreth part of the whole auriferous country(was occupied at the terminus of the year 1866. Quartz-mining already furnishes nearly one-half of the yield of gold in the colony. The total sum for 1866 was £5, 916,776, of which £4,077,197 was the produce of the alluvial gold, and £1, 839, 581 came from the quartz.

Slate Quarrying in Wales.

Joseph Kellow is writing in the *London Mining Journal* a series of letters on the slate trade in North Wales. The first that has attracted our attention, relates to the economical working of the quarries, and, undoubtedly, will interest our readers in the slate districts. Mr. Kellow says: The subject which I am about to refer to is not less important than that briefly considered in my last letter, and which related for the most part to the opening of "pillar-gutters." In a quarry "chambered," each "gallery" is bounded right and left by solid slate rock pillars, and having a floor its entire width. One "pillar-gutter" only is required, and that by the side of the pillar to which the grain inclines. This supplies an *open side* to the bed of rock first to be removed, but "floor-gutters" are also necessary to make an *open end*, thus facilitating the work of quarrying the rock to be manufactured. This "floor-gutter," like the "pillar-gutter," has to be made in every gallery, the only exception to this rule being that now and then some "joint" or "slant," or "slide," offers facilities, for a few yards, for removing the slate rock without the extra labor and waste that would result from blasting it. A radical improvement in performing this kind of work, "floor guttering," would materially enhance the profits of quarry enterprise. A much larger percentage of good slate rock is destroyed by adhering to the present imperfect system of boring and blasting the "floor-gutter" than in opening up the pillar-cutting. This is to be accounted for from the fact that the former has to be opened *across* the grain, whilst the chief strength of the gases from each blast of powder operates diametrically opposite. The effect of this may easily be imagined. With great velocity and violence the gases force their way unchecked along *the line of the grain*, both *upwards* and *downwards*, shattering and destroying the rock for a considerable distance; therefore, a very large proportion of it is not only useless, but has to be removed to the *waste heap* at great cost. The system of opening "floor-gutters" being the *horizontal* (upon each stratum of rock,) an even floor is made, which enables the workmen to transfer the slate "blocks," when wrought sufficiently sizeable, without much trouble. No person can fail to perceive the importance of duly considering the means which are necessary to open, or disconnect, each stratum of rock with the least possible damage. The floors of each "gallery" can be laid out, as a rule, at proportionate distances, as it seldom happens that "foot-joints" or "loose ribbons" form any other course. Provided the slate rock is good, the system which I am about to describe, it fairly carried out, would prove of an immense advantage to the proprietor. In order to do this, it will be necessary not only for the local manager to lay it down as *law* when the "bargains" are set to the men, but to observe the opening operations with the strictest scrutiny and vigilance, else the holes will be planned as the operatives desire—to save time, and not to save slate. A proper arrangement of the *holes* to be blasted, and the angles at which they ought to dip, are among the first considerations for rightly appropriating the strength of the powder, and to secure from injury, as much as possible, the "floor" of the gallery and upper side of the "gutter." In opening *across the grain* the powder, if not tightly compressed in the hole, will either "blow the tamping" or expend much of its force in making destructive incisions *lengthwise* of the grain of the rock. But suppose the hole be only *half filled* with powder, and *tightly compressed*, if the beds are free from "joints," and bored at right-angles with the cleavage, wholesale disaster is inevitable. Let us take the most favorable view of the *old system*, and suppose the cleavage to incline at an angle of 50°, and the holes are bored nearly vertical, the tendency of the gases would be to lift the wedge-shaped burden, and shatter the rock in the next depth. Therefore, in order to save the great mass of material that is now sacrificed, and yet do the work of "guttering" effectually, it will be only necessary to attend to the following simple rules: The skilled rockman is supposed to know when and where to take advantage of "joints," &c., which in some instances will render it necessary to deviate slightly from the principle to which I am about to invite attention. It must be patent to all acquainted with slate deposits that the damage done to the body operated upon will be in proportion to the advantage given by the force employed, hence the importance of using *shallow* instead of *deep* holes in performing this kind of work. I maintain that holes from 8 to 10 inches deep for "floor guttering" will (if made at a proper angle across the cleavage) prove practically successful to the end contemplated. It can be easily shown that holes of this depth only require from 3 to 5 inches of blasting material, which, being well tamped, will not display any excessive traces of its effective power much beyond the line of the "gutter." In breaking the face of the rock the first course of holes ought not to exceed 7 inches in depth; 3 inches of *good powder* would then lift its "burden," and do its work to the purpose as far as the floor, and form the higher wall slightly leveled. The second series of holes should be (according to circumstances) about 10 inches deep, being bored upon the proper principle (the wall on the upper side having been formed,) the charge would lift its load, in accordance with the necessities of the situation. Ignorant and inefficient rockmen may prefer the old way of doing things, notwithstanding it is attended with a fearful amount of disaster. In consideration and a lack of caution invariably lead to ruin, therefore it needs no comment. Setting aside the all-important subject relating to the great saving in slate rock resulting from this principle, I argue that "deep-hole blasting" in the opening of "gutters" requires *more time* and *more powder* than the system which I now advance. Any man accustomed to "drilling" can bore six holes 10 inches deep in the same, or less, time than he could bore one hole 40 inches deep. Again, not one out of three "gutter" holes of this depth does the work assigned to it, consequently *other holes* and *other powder* are required to extract the loosened mass. I have long ago demonstrated by practical tests the philosophy of the principle that I am now advocating, and only for the interest of quarry proprietors and quarry operatives do I now, by your permission, give publicity to facts confirmed by experience.

☞ Gold mining in Brazil is conducted in a profitable way by two companies at least. We learn by advices just received that the mines of St. John del Rey company returned during July a profit of £9,287, and those of the Don Pedro company during the same period a profit of £2,781.

Original Papers.

GAS-FLAME REACTIONS—I.

By R. BUNSEN, Professor of Chemistry at the University of Heidelberg. Translated for the AMERICAN JOURNAL OF MINING, by H. ENDEMANN, Ph. D.

Almost all blowpipe reactions may also—and indeed with greater facility and precision—be directly produced by the flame of the non-luminous gas-lamp, known as BUNSEN'S Burner. Certain peculiar advantages, which the flame of this lamp possesses over that of the blowpipe, may be made useful in producing reactions, by which the smallest traces of many co-existing substances may often be discovered, when the blowpipe, or even the finest analytical means, fail to detect their presence. The number of new reactions which can be produced by this new method, is so great, that I can only mention the most important, leaving it to those who wish to be better informed on this subject, to follow out by analogous methods, in other directions, the investigations here described.

THE NON-LUMINOUS GAS-FLAME AND ITS PARTS.

The non-luminous gas-lamp, used for reactions, is shown in

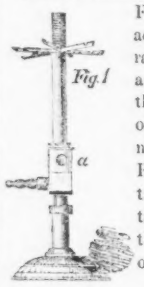
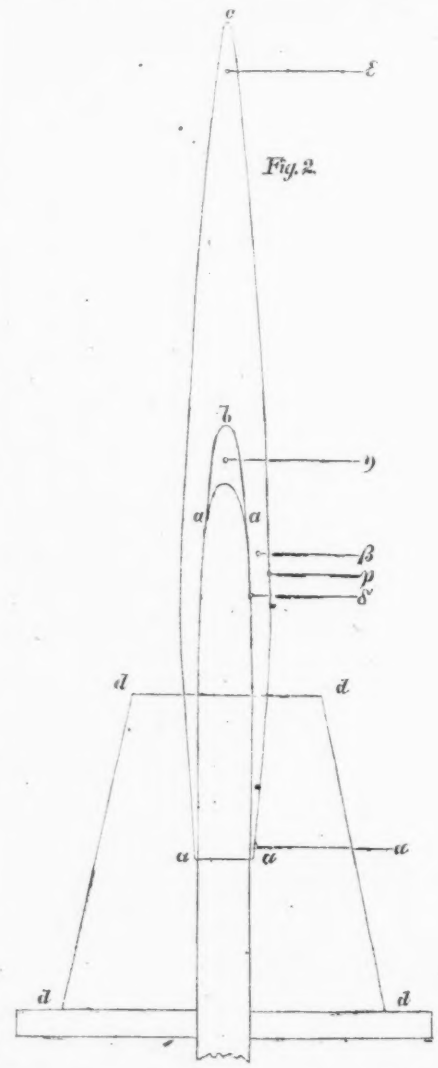


Fig. 1

FIG. 1, drawn on a scale of two-sevenths its actual size. It must be constructed of accurate dimensions, and especially provided with a revolving damper at *a* for closing and opening the air-holes, in order to regulate the draught of air for every size of the flame. It is also necessary to give to the conical chimney *d d*, FIG. 2, which confines the flame, such proportions as to secure a perfectly quiet combustion, without any flickering. FIG. 2 shows this flame in its natural size. It is composed of the following three principal parts:

A. The dark zone *a a*, containing the cold gases, mixed with about sixty-two per cent. of atmospheric air:



B. The flame-mantle, *a c a b*, formed by the burning gases;

C. The luminous point, *a b a*, which the lamp, when burning in a normal way, with opened air-holes, does not show; and which must be produced, when needed for reactions, by closing the air-holes until the requisite size is attained.

In this three principal parts of the flame there occur the following six zones for reactions:

1. The base of the flame, lying at *a*. Its temperature is comparatively very low; since this part of the flame is constantly cooled, partly by the cold air rushing in from below, and partly by the cold edges of the gas-tube, which absorb a considerable quantity of heat, and carry it away by radiation and conduction. By exposing mixtures of different flame-coloring substances to the part of the flame, we often manage to evaporate the most volatile constituents separately, by an almost instantaneous operation, and thus to obtain their temperatures, where they would become covered by the colors of the other, less volatile constituents.

2. The "melting-space" lies at *β*, a little above the first third of the height of the flame, equally removed from the outer and inner circumference of the flame-mantle, where its width is greatest. As in this zone of the flame the highest heat prevails, it is used for examining substances as to their fusibility, volatility, and capacity for emitting light, and for all smelting processes conducted at high temperature.

3. The lower zone of oxidation is situated in the exterior border of the melting-space at *γ*, and is especially adapted to the oxidation of oxides dissolved in glassy fluxes.

4. The upper zone of oxidation, at *ε*, is formed by the upper point of the non-luminous flame, and acts most energetically with the air-holes of the lamp fully open. The oxidation of the larger assays, the evaporation of all volatile products of oxidation, and, generally, all oxidations for which not too high a temperature is needed, are effected in this zone.

5. The lower zone of reduction is at *δ*, in the inner border of the melting-space, towards the dark cone. Since the reducing gases in this space are still mingled with uncombined atmospheric oxygen, many substances which would be reduced in the upper reduction flame, remain here unaltered. This part of the flame affords therefore very valuable reactions, which cannot be produced by means of the blowpipe; it is particularly suited for reductions on charcoal, and in glassy fluxes.

6. The upper zone of reduction consists of the luminous point *μ*, originating above the dark cone, whenever the draught of air is diminished by the gradual closing of the air-holes at *a*, FIG. 1. If the luminous point be made too large, it will cover a test-tube, filled with cold water and held in it, with a coating of soot. This should never be allowed. This part of the flame contains no free oxygen, but is rich in free, incandescent carbon; and has therefore stronger reducing qualities than the lower reducing flame. It is used especially for reducing metals, to be collected in the form of coatings.

(TO BE CONTINUED.)

AN ACCOUNT OF THE CENTRAL AND MINERAL DISTRICTS OF VERA CRUZ.—I.

Written for the American Journal of Mining, by CHARLES DE ST. CHARLES, Jalapa, Mexico.

SITUATION, LIMITS, EXTENSION, ETC.

The State of Vera Cruz embraces only a narrow strip of land, extending from Northeast to Southeast, situated between 17° 43′ and 22° 15′ of North Latitude, and 0° 15′ and 4° 25′ Longitude East of the meridian of the city of Mexico. It is bounded on the North by the State of Tamaulipas; on the West by the State of Puebla, and part of the State of Mexico and San Luis Potosi; on the South by the State of Oaxaca, and on the East by the Gulf of Mexico, which bathes the coast for nearly a hundred and sixty leagues. Vera Cruz contains about 3,500 square leagues of land. The ports of entry are Vera Cruz, Tuxpan, Tecolutla and latterly, Nantla.

CONFIGURATION AND PHYSICAL ASPECT.

The surface, with the exception of a narrow strip, bordering the Gulf, is very mountainous, particularly the district of Orizaba, which is partly occupied by the South Sierra Madre or Mother Range of mountains, which penetrates into this State by way of Oaxaca, and continues into the district of Zacatlan, State of Puebla. This Cordillera is noted for two high and majestic mountains. The first is a volcano called Citlaltepetl, (or, in Castilian, Cerro de lat estrella) from Catalina (estrella, star) and Tepetl (mountain), situated Northeast of the City of Mexico. It is conical in form, and its top, perpetually covered with snow, has the appearance of a star. According to HUMBOLDT'S observations, its elevation above the level of the sea is 5,295 meters, or 17,208 English feet. It is visible from the sea, and is used as a guide by navigators off the coast. The second mountain worthy of mention is the Cofre de Perote, called by the ancient Mexicans Nauchampatepetl, which signifies square mountain. This mountain is notable for the square block of rock, like a trunk or chest, which crowns its summit, and gives origin to its name. It is 4,089 meters or 13,286 feet, above the level of the sea, and may be seen from the port of Vera Cruz, and from a large part of the Gulf of Mexico.

NATURAL PRODUCTIONS.

In the territory of this part of the Republic of Mexico, there are two districts distinguished for the extent of their uncultivated territory and undeveloped but extensive resources, of almost every name and nature. These are the district of Jalapa and the district of Jalacingo, embracing also Tesuitlan. They are subdivided into three mineral districts, viz: Tatatila, Zomelahuacan and Tenepanoya, situated Northwest of Jalapa and North of the Cofre de Perote. Many mines in these districts have been abandoned soon after their discovery, for want of capital, machinery and the requisite skill for their exploration. The proprietors now in possession have not the knowledge to work them, and affirm their inability, from the same cause, to develop the gold mines discovered within the last five years, and the deposits of iron and other minerals which abound in this region. Any intelligent person, visiting the locality in question, will realize the truth of these statements by personal observation. From time immemorial, it has been the folly of all foreigners to pass over these fields of mineral wealth, and search for treasure in the inte-

rior, generally in a barren cactus country, thus isolating themselves and their business from all commercial or social communication with the outer world, from whence they came; and this error continues to the present day.

These three districts, Tenepanoya, Tatatila and Zomelahuacan, are in the Tierra Templada or temperate climate, in the heart of a salubrious and exceedingly rich agricultural region. The variation of the thermometer does not exceed twenty or twenty-two degrees Fahrenheit. Jalapa, twenty or thirty miles from the mines, is the Saratoga of Mexico. In that city living is very cheap as regards house-rent and provisions, but somewhat expensive in wearing apparel, furniture, mechanical and manufacturing implements, machinery, &c. The excellence of the fruits and all kinds of vegetables, is, perhaps, unequalled. Mercantile business is precarious, depending on exorbitant prices and uncertain sales. The accommodations of living would be very strange to an American, but by no means disagreeable. Land of perpetual fertility and productiveness can be purchased remarkably cheap, or acquired by lease upon such terms as almost amount to a gift. As a general truth, it may be affirmed that the soil has never been turned up for more than six inches below the surface, for the want of proper ploughs. The cultivation and preservation of coffee plantations is the most promising industry of an agricultural character; since this crop is certain, liable to no accident from insect or climate, and, once planted and cared for, remaining productive forever after. Labor is cheap, varying from 37½ cents per day for youths to 62½ cents for men, out of which the laborers board themselves. Travellers and freight are conveyed on horseback. Occasionally an old fashioned American stage-coach goes from Jalapa to Vera Cruz, charging twenty dollars to each passenger for that most delightful jolting trip. Freight costs twelve dollars per mile, load of 350 to 400 lbs., and is five days coming from Vera Cruz. The road, which is supposed to have been originally built in the days of Montezuma, was formerly, for durable masonry, convenient location, and beautiful scenery, one of the finest in the Republic; nor has any other road, located in modern times between Vera Cruz and Mexico, been able to compete with it in shortness of route or practicability. It is deeply to be regretted that intestine war, as in every country where it has raged, has left its savage footprints on this noble and ancient highway, which is at present in a most dilapidated condition.

Besides the production of coffee, may be mentioned sugar, rice, rye, wheat, corn, tobacco, cotton, potatoes of all kinds, cabbages, beans, peas and vegetables of every name, throughout the whole year. The principal timber for building and other purposes is pine, ash, cypress, rosadillo (a species of rosewood), oak, cedar (white and red), wild cherry, allspice, etc., etc. Of fruit-trees the variety is endless, including the apple, peach, pear, cherry, orange, lemon, mango, zapote, pagna, pineapple, papaya, anona, guayaba, citron, platana, banana, chirimoya, aguacate or vegetable butter, etc., etc. Of drugs and dye stuffs, there are sarsaparilla, pulga or jalap, ginger, indigo, fustic, turmeric, yuca or starch root, vanilla, chamomile, with about two hundred medicinal roots and herbs, not known in botany by name, but familiar to the natives, who use them as specifics with success, and prefer them to official remedies. The cotton-tree, occurring between Tuitlan and Papantla, called "Algodon de Sebya," and yielding immense pods of long-staple and silky fibre, but somewhat yellow color, and the Planta de Ramie and the Meguey, with their lint fibres, as indigenous growths, susceptible of unlimited cultivation, and possible substitutes for cotton, flax and hemp, are well worthy of the deepest attention and practical development from American manufacturers.

The ports of Tuxpan and Nantla are, in point of health, safe to enter at all seasons of the year, while those of Vera Cruz and Tampico are only so from the 15th of November to the 1st or 10th of May.

[TO BE CONTINUED.]

Mining Summary.

GOLD AND SILVER.

California.

Alpine County.—From the Monitor *Miner*, October 21, we take the following: The IXL. mine is said to be looking better at this time than at any previous period of its history. In the lower tunnel they have a vein of pay ore four feet thick, half of which is said to be first class.....The Tarshish lode is not measured yet, for though penetrated nearly at right angles over 85 feet, the west wall is not found, nor do we think it will be for two or three hundred feet yet, judging by the croppings. We visited the mine yesterday, and found that at the extreme point penetrated they were finding ore of good quality both in pockets and in the quartz. The croppings indicate the presence of a larger body of ore ahead than that found near the east wall. Whether the main tunnel is now near it or not a few weeks' application of the development theory will determine.....The Rippon company, owning the old Mammoth ground on the Mountain lode, at Silver Mountain, struck their ledge recently, and are now breaking quartz.....Two men are working in the Alpine tunnel. The real Tarshish sulphurets now and then shows itself.....In the Mountain tunnel this week, the workmen struck the largest stream of water yet encountered even in that notoriously wet region. If water is an indication, the Mountain company will get a monster lode.....Good progress is being made by the contractor, Mr. J. P. Ray, in running a tunnel for the Merrimac claim, about 30 feet being now completed. They are running alongside the ledge, and the work goes on night and day.....Davidson's mill is working on Tarshish ore now, the drying kiln being complete. A shipment of bullion will be made next week.

Placer County.—A correspondent of the *Bulletin* writes under date of September 23: Without any excitement or breeze felt in the outside world, an extensive mining interest has sprung up in the neighborhood of late. The Valley View Quartz company is regarded by all as very valuable. A mill of 40 stamps has been paying dividends on it right along. It is now sold to an English company in London. Harpending found this quartz lead a much more profitable investment than the schooner Chapman venture. Crosby & Manter have a mill adjoining the large one which works five stamps and two arastras. It is surmised by those that know, that the rock of the small mill is by odds the richest. Nickerson, Cadwalader & Hubbard have nearly completed a third mill in the same locality of 24 stamps.....The Auburn *Stars and Stripes*, of the 18th ult., has the following: The Green Emigrant company have made another rich strike on their claim, at a distance of several hundred feet from any previous strike. Their late discovery was made on top and near the centre of the hill, at the base of which they have found such fabulously rich deposits. Seams of auriferous talcose slate, apparently alive with gold, have been found, with every indication of being continuous, in the hard quartz that forms the hump on top of the hill. The owners, impressed with the belief that the great question is, where gold is not, rather than where it is, have started a tunnel into the base of the hill, and intend to go clear through.

Nevada County.—Judge Rolfe, who has written a report for Mining Commissioner Browne, informs the *Transcript* that the present annual gold yield of Nevada county is $9,700,000. He estimates that it has not materially decreased in the past five or six years, as the increased yield from quartz and cement makes up for the decrease of the placers.....The *Transcript* of the 22d of September, has the following items: The Grizzly mine, after a run of twelve days, yielded $1,200. This is a second run in which it has paid about the same amount. The mill only has five stamps at present, but it is the purpose of the company to put up five more before winter; the machinery is already upon the ground. The ledge is large, and sufficient rock can be taken out to keep ten stamps in operation day and night. The Grizzly mine promises to be one of the best paying mines in the county. .....The Birchville Quartz Mining company, whose claims are located at Eureka, after the last run, cleaned up $40 to the ton. For several crushings this mine has yielded an average of from $30 to $40 to the ton.....The Commercial is an excellent ten stamp mill recently erected near Eureka by San Francisco parties, for the purpose of crushing rock from their mine. The Commercial is said to be a first-rate mill. It commenced work last week .....Some parties are engaged in saving the tailings which comes from Stiles' mill. The sand coming from the mill is caught in vats, and then run through sluices, over blankets, upon shaking troughs, where the sand is washed off and the sulphurets retained to be worked by the chlorine process .....The same paper, of September 20, says: The claims located on the old Yuba river channel, in the vicinity of Washington, in this county, are paying first-rate. Recently, Battis & Co., whose claims are located half way between Rocky Bar and town, struck a splendid bed of gravel which is three feet deep, and prospects splendidly from top to bed-rock. The incline is down about forty feet, and the main tunnel is opened some twenty feet. It is said to be one of the richest claims yet opened upon the river bed. At Rocky Bar, all the companies at work are making lots of money. On Tuesday last, the lower company, Root & Co., took out gravel which paid over nine ounces to the pan. ..... The same paper, Sept. 15th, has the following: The shaft in the Scandinavian ledge is now forty-five feet deep, and a drift has been run upon the ledge thirty feet. The lead is two feet wide, with a rich pay seam of six inches running through it, in which gold can be seen in abundance, without the aid of a glass. Some forty or fifty tons of rock are already out, ten of which are of a very high grade. No mill test has yet been made, but miners declare that the rock will yield first-rate pay.....In the Oceola claim, at Rough and Ready, the ledge has been struck sixty feet below the surface. The lead is fifteen inches thick, and sufficient rock will be taken out next week for a test by crushing..... From the *Gazette* of Sept. 13th and 16th we obtain the following items: One hundred tons of rock from the Fidelity ledge was recently crushed at the Tecumseh mill, yielding about $1,400. The claim is on the Yuba river, about five miles above Omega. The ledge is large, well defined, and has a favorable reputation. .....Some fine specimens of gold-bearing quartz from the Cunningham mine has been exhibited by John Pattison, the superintendent. The specimens were taken from the bottom of the incline now being sunk, and contain much free gold and sulphurets. The incline is now down to a depth of two hundred and fifty feet on the slope of the ledge, and will be sunk fifty feet deeper when another level will be run. The ledge at the bottom of the incline is about eighteen inches wide, and the rock looks better than any ever before taken from the mine.....The editor, in speaking of the different companies now at work at Relief hill, says: The Independent mine is one of the best mines in that vicinity. The tunnel is in one hundred feet, and two wing tunnels of one hundred feet each are completed. During the past year the mine has been worked with good success, paying considerable more than working expenses, which are heavy. If this company can work off one hundred feet front on their mine every year, which is a liberal estimate, it would require one hundred years to exhaust their claims. The Eagle company have just commenced washing through their new tunnel and shaft. They employ four hundred inches of water, twelve men and three pipes. The latter have a pressure of two hundred and twenty-five feet. The mine is owned by eight different parties. Before they run their last tunnel this mine paid its owners well, and its present prospects are better than ever before. The North Star company, and Aaron Davis & Co., employ twelve men and 300 inches of water each. They do most of their work by blasting, and loosen their ground so thoroughly by this agent that they require a less amount of water to wash it away. Three or four other companies also are successfully at work at Relief hill, on a smaller scale, however, than those we have above noticed. Altogether, about eighty men are employed in these mines. They take out more gold and wash away more gravel than two thousand men could without the aid of powder and hydraulic pressure .....Dr. Farnham, of San Francisco, has recently purchased an interest in the Downer claim at Chalk bluff. The ground was located last February by A. J. Downer. The Doctor has sunk a prospecting shaft on the claim to the depth of thirty feet, and the gravel prospects about three cents to the pan..... The Marysville *Appeal*, Sept. 15, says: Gen. O. Evens & Co., at the last clean up of their mining claim at Buckeye mill, Nevada county, took out, after a four weeks' run, something over $22,000 of gold dust. These are the best hydraulic mining claims in Nevada county.....The *Gazette* says: J. J. Collins, of You Bet, has been at work two years, and spent about twenty thousand dollars, in cement mining at that place, and has just struck pay dirt for the first time. He has a 10-stamp mill. His industry and perseverance are now likely to meet with the success they merit. Heydiff's mill, Mallory's mill, and the Neece & West mill are all running on cement, and said to be paying their owners dividends.....The Meadow Lake *Sun* says: Gold Run Mine is being rapidly developed under charge of Mr. David Ross, the company's thoroughly competent superintendent. The tunnel has been driven in for a distance of two hundred and sixty feet along the line of the ledge, and the ore of the mine is looking well. In no mine in Excelsior district have more satisfactory developments been made than in the Gold Run. In a month or two the company owning this claim can make as good a showing, as far as a well developed and well defined quartz lode is concerned, as any one in the district. We were shown a day or two ago some splendid looking rock from this mine, which assays well.....The Meadow Lake *Sun* says: The Green Emigrant company cleaned up the batteries of the California mill, last week, where they have been crushing their ore. From eighty-four tons of rock crushed, nearly $3,000 in gold was obtained. The company have nearly six tons of sulphurets, which they saved from the rock crushed, which when worked will pay not less than $100 a ton. The Green Emigrant boys have lots of ore fully as good as that which they have just crushed.

Shasta County.—The *Courier* of a late date says: Parties who have just returned from Hazel Creek, a stream which puts into Sacramento above Portuguese Flat, says the miners there are realizing excellent pay from their mines. The gold found on the creek is coarse, and sometimes mixed with quartz We were shown five or six nuggets found in these mines, several of which weighed over $50. There are but few miners on the creek at present, but there is sufficient good mining ground lying idle to give employment to a hundred men .....The Bamboo company, at Marion Flat, have resumed work in their diggings, and are taking out excellent pay. The claims on Dutch Hill and Barker Hill are all paying good wages.

Mono County.—The Sonoro *Herald*, of Sept. 14, contains the following: From R. M. Wilson, United States Deputy Surveyor, who has lately returned from an official visit to Mono county, we learn that the prospects of our transmountain neighbors are brightening. The Empire company at Brodie except to resume operations soon; also the Lady Alice company. Mooney & Walker. Kernohan & Co. and others are working their claims successfully, the rock averaging from $15 to $25 per ton, and is crushed by water mills on Rough Creek, about two miles distant from the mines. At the Blind Springs and Montgomery districts a great quantity of the ore is being taken out for shipment to San Francisco. Williams & Co. are working the Diana successfully by means of a four-stamp mill, with pans. A lode has been discovered between Big Town and Monoville, near Castle Peak Mono county, which proves to be very rich, Snyder & Co. are the fortunate discovers.

Calaveras County.—The *Chronicle* says that Lamphear & Co. are meeting with the most flattering success in the prospecting of their quartz lead. At the depth of 120 feet the ledge is six feet wide, well defined, and the rock will pay handsomely. The machinery with which the claim is at present being worked is defective, and scarcely powerful enough to keep the water out and perform the other necessary operations. A steam mill will be erected this fall. Their claim is one of the best in the county. .....T. S. Bever, Esq., proprietor of the "Old Shields Claim," at Rich Gulch, has leased it to a company of capitalists, who will immediately commence operations. They have rented the French company's mill, ten stamps, and will put a large number of men at work on the lead in a short time. Our quartz interests in this vicinity never looked so favorable as at present.....The San Andreas *Register* says: Dr. Southwell has erected a first-class quartz mill at Carson's, of twenty stamps capacity, which is expected to be set running on the 1st prox. The most flattering results are confidently anticipated in the working of this mill, as the machinery is all good and the rock excellent. If expectations are realized there, it will give a fresh impetus to mining in that vicinity.....Work will be commenced again at once on the Calaveras mine at Copperopolis. It has been lying idle for about two years.

Inyo County.—The Virginia City *Trespass* has received a letter from Charles H. Duval, at Independence, Inyo county, Lone Pine Mining district. The furnaces are being erected wherewith to smelt the rich ore, and will be completed soon. The Virginians are delighted with their ledges and prospects. .....The Dutch Flat *Enquirer*, Sept. 11, says: Dr. Dozier has just returned from Owens' River country. He finds a splendid opening, and the company have decided to erect monster works at once. The Doctor feels confident that he can get double the amount of silver from all classes of ore obtained in that region. First-class ore that now yields $700 per ton can be made to pay $1,500 by the new process, and second and third-class ore will also pay well to work. The whole cost of reducing will not exceed $100 per ton. When the new works are erected from five to ten tons per day can be reduced.....The Visalia *Delta* Sept. 11, says the Owens' River country is going ahead rapidly; new discoveries and rare developments occurring almost daily.

Nevada.

The Comstock.—The San Francisco *Mercantile Gazette*, September 30, says: In mining shares the market has continued very much depressed, with, however, some tendency to greater firmness at the close, when the downward tendency in prices, which has been so marked in the last six weeks, seems to have been checked. The operators for a fall have covered to some extent, and have not pressed further sales, hence the market has been more steady, and, as a whole, closing higher than for last week. The leading prices at the close of a succession of weeks has been as the in following table:

	AUG.		SEPT.			
	24th.	31st.	7th.	14th.	21st.	27th.
Ophir	$85	101	92	74	76	80
Gould & Curry	600	475	307	300	310	325
Savage	225	205	199	120	139	157
Chollar	428	415	432	303	344	370
Billion	33	30	26	18	21	22
Imperial	138	132	152	137	148	150
Yellow Jacket	910	597	575	407	477	560
Crown Point	1190	945	945	710	785	760
Beicher	295	155	140	95	90	110
Overman	77	69	64	62	58	58
Sierra Nevada	36	34	17	8	5	5
Kentuck	347	305	218	159	200	242

The accounts from the mines generally do not improve, as a whole, and from all parts of the Comstock lode they are of about the same tenor. There are, however, private advices which give very much better accounts than have reached the public. There have also a number of leading parties in interest gone hence to Virginia, and it is possible that a new face may be put upon affairs. Hale and Norcross stock has been steadily depressed. There have been from the first sales, September 3, at $2,500, 60 feet apparently sold, and the last was at $825 per foot. The sales were nearly all seller 30 at 69@90; how many are genuine cannot be known until the transfers are made. The stock was taken by strong parties. The ore in the mine runs poor, and will not average over $28 per ton. The expenses have been very heavy for the new machinery, and no dividend will be paid for October. The engines have been started up, and work admirably. The mine looks as well as ever, and the shaft has been prosecuted vigorously. Savage has risen from $120, or $2,400 per foot, to $157, or $3,140 per foot, under rumors of further discoveries. The transactions have been very large in this stock. The weekly report shows, as compared with last week, as follows:

	Ore, tons.	Value.	Per ton.
September 14	1,631	$68,747	$42 19
September 21	1,879	77,804	40 40

Crown Point, which went as low as $570, ran up to $776, and closed at $670. There has been no material change in the prospects of the mine. The shaft is down 90 feet, and the winze in the 600 feet lead is in good ore. The production is about 15,000

tons per month. On the 25th, $14,427 bullion was sent down. Chollar-Potosi stock has been freely dealt in, and the price has risen from 303 to 370 at the close. The ore in some localities of the mine shows a slight improvement. The new shaft at a depth of 900 feet has reached the west wall of the ledge. The fifth station is being opened at a depth of 875 feet. There was $9,860 bullion sent down on the 24th. Kentuck stock has steadily risen from $160 to $242. The receipts of bullion continue large. This mine has sent down $82,385 thus far this month. Yellow Jacket has fluctuated from $390 to $510, closing at $452. The shaft is being sunk 200 feet, and a fair body of ore, it is stated, has been discovered in the west drift of the south mine. Overman has been very steady at about $55. The product of this mine increases. In August, 1,232 tons ore were received, and 834 reduced. On the 16th of this month $3,000 bullion was sent down, and on the 24th $5,000. The company has on hand $43,000. Imperial has been stronger, rising from $135 to $150 at the close. The receipts of bullion in this mine has been $35,262. The works are making good progress, and it is supposed drifting will commence in November. Ophir has been little dealt in, and closed at $79. Belcher has risen from $82 to 132, closing at $110. The advance seemed to be due to an assessment of $15 per share, levied on the 21st instant. Confidence has exhibited small sales at $50@$55. Sierra Nevada declined to $4. The assessment $10 is delinquent October 11.

Humboldt.—The *Register* of September 14 says: The Oreana furnaces are in full blast, and turning out bullion daily with the most satisfactory results. The great drawback at present is the difficulty in and cost of shipping the bullion; but very soon the railroad will come to their relief, and then more bullion will be shipped from the Montezuma mine in one year than the famous Comstock has yielded up to the present time.

Echo District.—The Humboldt *Register*, September 14, says: The owners of the Alpha mine, located in Echo District, resumed work last spring, after having suspended operations for twelve months or more. They now have a vein of fine ore from three to five feet in width, and have about 150 tons of ore on their dump. Fifty tons of this ore was worked in Holt's mill some time ago, averaging about $75 per ton. One of the company has gone to San Francisco to secure a mill.

Columbus District.—A correspondent writes that but little has been done during the past year towards the development of the mines of this place. There is no doubt but that the mines are rich in the precious metals, and that any amount of pay ore can be readily and cheaply obtained for milling. The great drawback of this district, like many others, has been the want of means and energy to take hold and push forward its interest by developing the mines. Another impediment to the properity of the camp is the want of wood for fuel and building purposes; of the former there is none nearer than twelve miles, and of the latter from forty to fifty miles. Colonel Samuel Youngs, a pioneer, has purchased recently a mill and mill fixtures, all complete, and intends erecting the same in Columbus.

New Pass District.—The Austin *Reveille*, October 5 says: The Ware mill, worthless for the reduction of silver, and which has been idle for a long while, is to be taken down and removed immediately to the district of New Pass, about twenty five miles west of Austin. The work of taking down was commenced this morning by Daniel P. Bell, who will rebuild the mill and adapt it to the reduction of gold quartz. The district of New Pass contains several important ledges of gold-bearing quartz, among which the Superior is a finely developed vein of upwards of five feet thick. The purpose of erecting the small five-stamp mill in the district is to test the quality of the ore thoroughly. If the result should be satisfactory, and that it will be there appears to be no doubt, it is the intention to erect a mill of great capacity. The property has been known for some time, and has been repeatedly tested, and is believed to be of great value. Mr. J. S. Slauson is the agent of the company and a considerable owner in the mines.

White Pine District.—We learn from Thomas Robinson, who has just arrived in this city from this district, says the *Reveille*, October 4, that the greater portion of the miners who left for the "Goose Creek" gold mines had returned, and were working their claims. Robinson and others are the owners of three large and apparently good ledges, of which we have hitherto made mention, named the Uncle Sam, Philadelphia and Vanderbilt. The Uncle Sam is declared to be twelve feet wide by the tape line. Both the head wall and the foot wall have been uncovered; and while the vein generally carries a good quality of mineral, there is lying upon the foot wall a stratum two feet thick of extra ore. The Philadelphia is also of great size, nearly as well developed, and exhibits a different but a high grade of mineral. The Vanderbilt is of less size than either of the above, appears to be well defined, and produces fine looking ore. These ledges are only slightly opened, but they present many of the best indications of good veins. The Monte Christo Company was working one of its mines, called the Mohawk, with considerable vigor. The machinery and nearly all the materials for its five-stamp mill had been on the ground some time, and workmen were rapidly giving them the form of a practicable mill.

Washington District.—Considerable activity prevails now in this long-neglected district, and there are favorable indications that its mining property will soon receive some measure of the attention that it deserves. Says the *Reveille*, October 4: We were shown last evening by Colonel James Fitton a diagram of that part of San Juan canyon in which the veins of the Silver Hill Tunnel Company are located, and also the prominent objects on the adjacent hills. The claim of the company embraces ten ledges, which were located at an early day, and have received more or less work. We were shown a box of specimens taken from the Reality ledge, which exhibits the characteristic mineral of the district. It is distinct from that produced by the greater number of the districts of Eastern Nevada, and is mainly an argentiferous galena, quite rich in silver. Ore of this character appears to be inexhaustible in quantity. The veins are generally large and regular in their formation, and vary from four feet to fifteen feet in width. Several attempts have been made to reduce the ores of the district, but they failed through the lack of skill of the operators. The ore exists in immense masses, and it is the judgment of competent authority that it could be readily and economically smelted, or reduced in a furnace of the proper construction. Timber of an excellent quality is abundant throughout the district, and fuel will bear only a nominal price for years. The riches and advantages of Washington District are indisputable, and it must sooner or later receive the earnest attention of capitalists. We are informed by Colonel Fitton that the ten ledges of the group of the Silver Hill Tunnel Company are so happily situated that they may be cut by a tunnel not to exceed four hundred feet in length. There is a good prospect that the work will soon be undertaken, as we learn that overtures have been made by substantial parties for a considerable interest in the handsome property of the company. The first success, of which there would seem to be no doubt, will place Washington in the van of silver-producing districts in the region.

Silver Peak District.—J. Williams, just in from this district, reports to the *Reveille*: He saw J. E. Clayton, the superintendent of the Silver Peak and Red Mountain Gold and Silver Mining Company, and whose operations will be conducted upon a magnificent scale. The machinery for mill and motive power had arrived, and it was the opinion of Mr. Clayton that a battery of twenty stamps would be completed and running in four months. Williams stopped also at the district of San Antonio, where Rigby was pushing work on the Liberty mine to great advantage. His small mill had been repaired and was running, but was to be replaced shortly by one of greater capacity.

Ione District.—The Belmont *Reporter*, of September 21, says "that parties in town from the Ione represent the prospects as more favorable than ever before. Eastern agents—real live men—are there with funds for the development of the mines, and there are good reasons for believing that the Pioneer mill will shortly be overhauled, put in good repair, and set at work. Those who control it are now negotiating with competent persons to assume charge of it, determined that when it is started again there will be no failure through lack of skill or a thorough knowledge of the treatment of the ores of the locality. Many of the miners there are now taking out ore for the Knickerbocker mill, which will be started immediately, the claim owners agreeing to furnish at least ten tons of ore per day for reduction. With both the Knickerbocker and Pioneer mills running, that section will produce an amount of bullion that will attract attention and stimulate enterprise there."

Silver Bend District.—Among the various ledges upon which developments have been and are being continually made, says the Silver Bend *Reporter*, is one known as the Potosi, which at the top exhibited but fair prospects of value. The owners have sunk two inclines to test the vein, one of which is fifteen feet deep and the other twenty. They have had no reason to regret the work, for a well-defined ledge ten feet thick and well-incased has been developed in either incline. An assay of the average ore obtained from the ledge yielded at the rate of $200 per ton. The Potosi is declared to be one of many similar veins in the district, which, if they were worked with energy and system, would develop the great wealth of that section, and render its prosperity perpetual.....For the past week, says the same paper, of Sept. 21, the mill of the Belmont company has been running with its new machinery and turning out lots of bullion. The new improvements are a new boiler, three of Belding's pans, two Belding settlers, new cam shaft, tappets, etc. The battery has also been overhauled thoroughly and every thing now moves like clockwork. At present the mill is crushing and amalgamating about ten tons of ore daily.

Hot Creek District.—The new mill at Hot Creek has been in successful operation for the past ten days. The first ore crushed in the battery was a lot of second class from the Old Dominion mine, the pulp assay of which was $150 per ton. A lot of Morey ore gave a pulp assay of over $200 per ton. There is also considerable ore on the way to the mill from the mines of Reveille district. Howell is now delivering a fine quality of lumber at Hot Creek from his mill near Red Bluff Springs, on the Pahranagat road; and a company is gathering salt for the use of the mill about thirty miles to the eastward.—*Id., Oct. 5.*

Twin River.—We learn, says the *Reveille*, October 3d, that a body of very rich ore has been developed in the Murphy mine of the Twin River company, which is said to be superior to any hitherto exhibited in the mine. In the very partial development of the Murphy, several chimneys of great extent have been encountered, which have produced ore of a high grade. The finding of heavy bodies of rich mineral at slight depths on the vein is a certain presage of what will be met with when the mine shall be opened to the depth of 500 feet.

Wilson District.—We hear good news from Pine Grove, Wilson's district, says the Virginia *Enterprise*, Sept. 17th. The Wilson company, ajoining the Midas, are taking out ore that will average $75 per ton, and have contracted for a mill which they will have running in December; meantime they have made arrangements for having 100 tons of ore crushed at the Pioneer mill. The Wheeler company are taking out six to eight tons of ore per day, that will go about $30 per ton. The Imperial company are at work upon a tunnel, the water having driven them out of their shaft. Their prospects are excellent. A lot of 1,900 pounds of ore from the bottom of their shaft, worked by Mr. Deihl, yielded five ounces of gold, worth about $90, or at the rate of $100 per ton. The Ophir and Mountain View companies, adjoining the Midas on the east, have excellent prospects. The lead crops out finely on their ground.....The same paper says: William Bourne arrived in this city night before last with a magnificent gold brick, the result of seventy-seven tons of ore crushed from the Midas claim. The brick, which weighs 383.60 ounces, was yesterday assayed by E. Ruhling & Co., and its value ascertained to be $6,696 62. The Midas will this month declare a dividend of $4 per foot, and after the payment of the same will have left in the treasury $850. The ore reduced was taken out at a depth of fifty feet below the surface. The Midas and Wilson companies are running a tunnel to tap the vein upon which their claims are located, at a great depth. The tunnel is now in 550 feet, and has cut a vein of ore eight feet in width, which assays $68 per ton.

Montana.

A correspondent of the Montana *Post* writes from Phillipsburgh, September 2eth: This town is laid out on a grand scale, with main streets running east and west, 100 feet wide, and intersecting thoroughfares of 60 feet width. Some fifty or sixty buildings in all stages of construction, and built principally of hewn logs, a good two-story frame hotel, and the necessary adjunct of whiskey shops, at present compose the town. Lots are held at from $300 to $500, and for half a mile the lots on Main street are fenced in. But there is one great feature in the town, and, in fact, the cause and origin of Phillipsburgh—viz.: the St. Louis & M. M. Co.'s Mill, which, under the direction of Mr. H. Countryman, will soon be completed. A battery of ten stamps, six Wheeler pans and three settlers compose the machinery. The building is of stone and in all particulars strongly and elegantly finished. As soon as completed, a full and detailed description of this mill will be forwarded to you. The ore to be crushed by this mill is taken from the Comanche and Hope lodes, both being situated one and a half miles west from the mill, with a good road leading to them. A gang of hands are now employed on the Hope in an open cut 85 feet long, running nearly due east and west, on a vein of five feet average thickness and twenty feet deep. The ore assays very rich, but as the mill will soon commence to prove the correctness of the assays, I withhold the fabulous yield the rock is said to give until the returns come from the mill. But little more is going on in the shape of development of the multitude of discoveries, and it but a tithe of the staked claims yield the fifth part of what they assay, bullion by the hundred tons will find its way from Flint Creek to the mint. The Rumley-Bugher lode is probably as large a ledge as any discovered, and from the course of it, appears to be a continuation of the Comanche. It shows an immense vein of ore and promises to be one of the best mines in the district. To give mention to all of the so-called rich lodes would require more space than you can devote to it, but as they are developed will receive due notice. Messrs. Harman, Slaughtner and Dicterly are now constructing in the gulch, one mile above town, three arastras, to be driven by horse power, with a capacity of three tons per day to the set. Each one is furnished with a heating flue, permitting work to go on during the winter. The rock, after being run through the first one, passes into the next one below, where the pulp is brought in contact with the quicksilver, thence goes into the third or lower one, there to be thoroughly amalgamated and drawn off. These arastras are built of a fine quality of the hardest kind of granite, and will be valuable to test the silver ores of the district, before erecting more costly machinery.....Under date September 26, a correspondent writes from Snow-Shoe gulch, that the ground is now held by ten companies, owning in the aggregate 12,000 feet. These companies are all at work, digging drain ditches and putting in flumes. * * * * At the head of this gulch on the right going up, is the famous Bailey quartz lead, from which all the gold in the gulch is supposed to emanate. It is now over a year since Bailey and company commenced hunting for the main ledge, having found rich float rock and other indications. Last winter they sunk a shaft 106 feet deep, from which several drifts were run in different directions, one of them 96 feet long, but they did not succeed in establishing any well defined lead. About two months ago a Mexican, Marcos Vego, went on the ground, and thinking that he could find the lead, entered into a contract to find and prove the ledge for a half interest in the same. On the first of August he commenced work, and from three to five men have been at work ever since. An open cut was started, fifteen feet in width, which was run back into the hill. At the distance of about 100 feet from the mouth of the cut they struck a well-defined foot wall, with perfect "casing" and "clay parting," and all the evidences of a permanent lead. The depth of the cut where the ledge was struck is 25 feet and strikes the lead at right angles. The side of the ledge that is laid bare presents a very fine appearance, and is thickly studded with gold which appears to be disseminated throughout the entire mass. Marcos, who is a practical miner of long experience in the mines of Mexico and Nevada, is very much elated at his success, and says that this is by far the richest gold quartz he ever saw, and hazards the opinion that it is the richest in the world, which I have no disposition to doubt, judging from the very rich rock, tons of which is laying at the mouth of the cut. His choice specimens are well worth a visit to the mines to see. A shaft will be put down on the lead far enough to prove that the lead does exist, and then arrangements will be made to procure a mill. Extensions are located in all directions for miles around.....A Red Mountain City correspondent writes of mining matters in Highland: The Only Chance is owned by Nevens, Floweree & Co. The first clean up from this lode from arastra was $963; second, $1,036.80; third, $1,338.20. Each run was from about six tons of rock. One run—one week—was made from Nevins lode, the result was 38 ounces; about the same amount of rock. Our gulch diggings have not equalled our expectations. Yet a large amount of gold has been taken from our placer diggings. I know of a number of fortunate ones who have gone East with from $3,000 to $5,000 each, and we yet have good ground. Highland will yet be the No. 1 camp of Montana. Ballarat, Forrest Queen, General Marion, Our Paitau and Wilber lodes will turn out gold in such quantities as to surprise the world; our silver lodes, near by, cannot be excelled by present discoveries, and we have but to await the arrival of suitable machinery and the development of our lodes, when we shall be rewarded as we are surely entitled to receive, the chief position among the mining countries of the world.....The *Post's* Beartown letter runs thus: As a whole, Beartown, if Helena and Virginia are excepted, is the liveliest camp of the Territory. The town consists of but one street, is built on a flat at the junction of Deep gulch with Bear, and lays no claim to architectural beauty or regularity of streets. A huge pile of headings and tailings on each side of a string of sluices runs up and down the center of the main street. The richest part of Bear gulch is in this flat, and not worked out yet, paying from $200 to $500 per day to the sluice. .....The *Herald* publishes the following record of some of the principal ditches which have recently been constructed in this territory, or are now being constructed, showing conclusively that mining is not "played out," and that the monied men of the country have full faith that rich results are to be derived from it. In Meagher county we have King & Gillet's ditch, from the mouth of Confederate Gulch, along the foot hills to Cave Gulch, and to supply the bars at the mouth of Magpie, Avalanche, Hellgate and Cave gulches. Distance, eighteen miles; grade, quarter of an inch to the rod. Thomas, Winemiller & Co.'s ditch, from Mill and Duck creeks to Eldorado bar in Confederate gulch. Size, three feet on the bottom, two feet deep, and two feet on top. Grade, half an inch to the rod; length, twelve miles. Collins, Vandleberg & Co.'s ditch, from Soup creek to Eldorado bar and Missouri river. Length, two miles; grade, one inch to the rod. Size, twenty inches on the bottom, and fifteen inches deep. In Deer Lodge county we have Kohrs, Newman & Co.'s ditch from Willow creek to Pike's Peak gulch, to supply hydraulic claims. Length, four miles; size, eighteen inches on the bottom, and one foot deep. Grade, half an inch to the rod. Kohrs, Newman & Co.'s ditch, from Rock creek to Pioneer gulch and Gold creek, supplying also hydraulics along Pike's Peak gulch; size, six and a half feet on the bottom, three feet deep, and ten feet on top. Grade, quarter of an inch to the rod. Length, eight miles and a quarter. In Edgerton county we have Williams & Bubee's ditch, from Little Prickly Pear creek to Trinity gulch and Silver City. Length, seven miles; size, forty inches on the bottom, and eighteen inches deep. Grade, quarter of an inch to the rod. In Jefferson county there is the ditch of Vandleburg & McCoin, from Crow creek to Indian creek, supplying Hog'em, Pinch'em, Rob'em, and Steal'em. Length, twelve miles; size, three feet on the bottom, and two feet deep. Grade, quarter of an inch to the rod. We do not claim that this is by any means a complete list ..... The *Post* notices "a large sale of quartz property made by Messrs. Rival Jones, Judge Lott, Mathews and Powers, to Messrs. Saulsbury and Everett, representing companies now developing property in the Silver Star district. The sale was 19,800 feet, being 1,100 feet on each of the following leads: Watseka, Watseka No. 2, Almaden, Julia Holmes, Deidesheimer, Poy Sippie, U. S. Currency, Rosa Bonheur, Na-chu-sa, Lost Dutchman, Como, Red Cloud, Prolific, Rochester Gem, Rob Roy, Shabona, Waveland and Hotspur. The consideration was $60,000. The property is all situated in Rabbit district, Rochester gulch, and some of the leads are remarkably rich. The same gentlemen recently purchased 13,000 feet in the Silver Star district of Greene Campbell, paying him $80,000 currency. The two purchases are about eight miles apart. It is understood that a mill will be put up at each place next spring.....The Helena *Herald*, Oct. 3, says: On Tuesday last, J.C. Ricker, Esq., cleaned up nearly forty pounds of gold from a run of one week in Hendrie's twenty-four stamp mill, on ore taken from his claim on the Union lead. The valuable brick into which this forty pounds of preciousness has been pressed is valued at $10,000 in currency.

Idaho.

The "strike" mania has reached this far distant Territory. The Silver City *Avalanche*, October 5, says: On the evening of October 1st, the miners and workingmen from several of the mines and mills in and about town, assembled at the Court House Hall for the purpose of organizing a Miners' League. The movement was characterized as a "strike" for higher wages. These miners have been receiving five dollars per day, and six were demanded. The meeting elected a committee whose duty it was to draft a constitution and by-laws, by which to govern the organization, and report the next evening at seven o'clock. Accordingly, the constitution, &c., was reported and adopted. It is yet impossible to decide how the matter will terminate. Nearly all of the mines have been idle for four days, but as we go to press we understand that some of the mining companies have commenced working again—some at the fixed amount of the League, $5 50 coin, and others at the former rate, $5—and the "strikers" are holding meetings to determine a course of action..... During the month of September, Wells, Fargo & Co. have shipped below, over the railroad line, $83,000, all the product of Owyhee..... We condense the following from the Idaho *World* of September

28th:—Work is rapidly progressing on the noted Big Ditch, which will supply water to the mines from far above Pioneer to the gulches which sink into Granite creek below. To complete this great work there will have to be 2,800 feet of fluming, and between 800 and 900 feet of tunneling. Contracts for building the flumes and cutting the tunnels have been let and the ditch will be ready early next spring. It will run 1,000 inches of water on the scale now projected, and this volume can be doubled with comparatively little labor. When completed, its entire length will be about thirteen miles from its initial point on Grimes' creek to its terminus above Granite creek divide.....It is difficult yet to pass judgment on the newly discovered mines in Deadwood Basin. Some who rushed out there from Boise Basin have recently returned and report unfavorably of the diggings, while many of the same class have returned, purchased fresh and large supplies of provisions and gone back again to Deadwood; but the general opinion seems to be that there are good diggings there, but how rich or extensive remains yet to be learned. The true state of the case will not be revealed until another season. .....A rich quartz lead has recently been discovered on Brummer Hill. It prospects exceedingly rich and creates quite an excitement in and about Canterville... .The following is from the Lewiston *Journal* of September 26: Two boat-loads of Chinamen, twenty-five in all, will go up the Snake this afternoon, and proceed to the rich diggings on Salmon river. We are informed that the Chinamen engaged in mining three miles below Umatilla are making three dollars per day to the hand .....We have the following from the Rocky Mountain *Gazette* in relation to the new mines of Kootenai: The mines are situated on a tributary of the Kootenai, and empties into that stream below the big bend. Prospects as high as $1.25 and as low as two cents to the pan have been obtained, and it is thought it will average twenty cents to the pan. It is from two to ten feet to the bed-rock, with plenty of water.

Colorado.

We take from the Central City *Register* of October 15, the following items: Mr. Whitney, accompanied by Mr. Simone and Colonel Heine, arrived here from Boulder on Sunday, whither they had gone to examine the coal-fields in that vicinity. They are now engaged in looking over the mining regions in this vicinity.....As we passed up on the Georgetown coach from Idaho recently, we learned something of mining on Clear Creek. A hopefully buoyant feeling is observable all along the creek. Professor McArdle, of St. Louis, has been examining the ores and lodes of Clear Creek county all summer, and is taking East with him a few tons of ore from the Crystal, which is to be reduced in St. Louis, and the button finally sent on to the Crystal company. If it produces $250 per ton, as Mr. Sisty thinks it will, it may wake up the Louisians a little.....Mr. Thackaray is building an arastra mill on Hukill gulch, designed to work on surface ores mined in the vicinity of the head of the gulch..... Mr. C. T. Sabin has again been placed in the management of the Whale company's affairs, and will proceed carefully to investigate the true character of the lode and its ores. Had he been kept in that position for the last two or three years, the company would doubtless have been some $400,000 better off. But it is never too late to mend.....Where the road first crosses the creek above Idaho, may have been observed all the season a crazy sort of outfit, water-wheel building near by, pump working, etc., well calculated to puzzle the inquiring mind as to its intention, or the principle on which it proceeded, lived, moved, and had its being. But two or three men have been burrowing under the bar at that point, getting from a half to two and a half ounces of gold dust per day to the hand. The first figure represents their poorest day's work, the last their best. They have been producing gold by the pound, and thousands of men might go and do likewise if they would .....Just below Mill City, Mr. W. A. Brown, agent for the Tiger company, is building an arastra mill and excavating a tunnel, now in 125 feet, aimed for the Virden lode, 400 yards from the mouth of the tunnel. It will cut the vein perhaps 800 feet from the surface. The company have other lodes crossing the course of the tunnel parallel with the Virden, the nearest of which is 400 feet from the commencement of the tunnel. The Virden has long enjoyed a first-class reputation. Mr. Brown is going to use arastras in his mill until the process question shall have been fully settled, which is a sage course to pursue without doubt.....At Mill City, Mr. Hawkins, agent for the Boston and Chicago company, has driven his tunnel a length of 353 feet, and has there struck the first of a group of parallel lodes 170 feet from the surface, and struck it big. It is ten feet between the walls, with slicken sides, three feet of pyrites of iron, and argentiferous galena quite free from gangue, and seven feet of gangue veined with ore. This is as neat a job as we have seen, and it has cost the company less than $10,500, all told, to date.....At Empire, Charley Martin and Andrew Mason are each running a stamp mill very successfully; Ed. Freeman is working two or three arastras, cleaning up from $200 to $300 a week.....There are other improvements being made in the older mining districts of the county, but the above is all that particularly came to our knowledge. There are neither idle nor desponding men in that section. Labor is in demand at $4 a day. .....By the way, Mr. Du Mont, agent for the Alden Tunnel company (Mr. B. Lombard, of Chicago) is meeting with strong indications of a lode in his tunnel. He is in between 200 and 300 feet, and within 20 or 30 feet of one of the company's lodes, which shows very boldly at the surface, on which a shaft was sunk to a considerable depth, and the ore proved rich. It is to be hoped this enterprise will succeed to sustain Mr. Lombard, to strengthen Colorado in Chicago, and to benefit the county. In excavating tunnels under and through mountains, a good deal of patience is necessary. There is no doubt it will pay in the long run.....The *Times*, of October 8, has the following: Mr. Garvin, who has passed the summer in the Snake River district, informs us that Montezuma is becoming a lively little mountain town, and bids fair to become quite a mining centre for "across the range." Two saw mills are established there, and several houses are being built. John Collom is building Scotch hearths, and may possibly run them during the winter. Lynch is employing five men on the Sukey lode. Whitney, Whiting & Co. have several men employed in Ten Mile district. There are a number of very large veins carrying silver ore in the neighborhood of Montezuma, as a sample of which we may mention the Taylor Ellen, which is fully 20 feet wide between the walls, or the supposed walls. Pieces of solid argentiferous galena, which two men can barely lift, have been taken from this vein. It has only been developed to a depth of twelve feet. .....The Winnebago lode on Castro Hill, and adjoining the well-known Castro lode, has as much good ore in sight as any mine in Gilpin county. The principal shaft is 230 feet deep, and during the last 90 feet an average of two feet of solid ore has been passed through. The crevice is now five feet wide, holding from two to three feet of fine ore. Specimens of native gold are often found, mostly in ore close to the walls. When the company choose to commence back-stoping, they can take out enough ore to keep two or three ordinary mills running for some time to come. The mine, at the depth it has attained, is comparatively dry, no pump being needed. The rock is hoisted by means of a whim.....The Smith and Parmelee Gold company during the month of September just closed, shipped 403 ounces of gold. We should be glad to report that two or three scores more companies have done as well. It can be managed. The ore is here, and the "process" is here likewise; all that is wanted is a small supply of greenbacks, and some energy and judgment to set the machinery in motion.....The furnace of the Red, White and Blue company, at Georgetown, is said to be a failure, and work is entirely suspended. We know not whether this is to be attributed to the want of dressing machinery, the poverty of the ore treated, or to the inadaption of the process for such ore. There is no doubt, however, that a cheap, simple furnace can be introduced for the purpose of reducing silver ores to regulus for shipment.....The owners of the War Eagle lode near Gold Dirt, will probably lease a stamp mill in the neighborhood, and work their lode during the winter. Half a cord of ore from this lode realized $57 in coin at the Keith mill, belonging to the Hope Company. At present quiet reigns supreme at Gold Dirt.....At South Boulder, Frothingham and Jones are still running surface ore from the Oro Cash lode through their mill with good results. They get through about one cord a day, which averages $300, although as high as $450 to the cord has been taken out.....M. B. Hayes, the new manager of the Gunnell mine, expects to resume work shortly.....The Ni-Wot company's new fifty stamp mill in Ward district, was reported to have commenced running some time back, but we hear nothing as to the amount of gold they are taking out. It will be remembered that before the mill was burned down last year, the company was realizing steadily $1,000 per day or thereabouts, out of ore from the Columbia. If they are taking out any thing like this sum just now we should like to have the particulars to place on file.....Mr. McCleary has started up the Empire mill at the mouth of Chase gulch, on ore from the Gregory Second. By the appearance of the plates it promises to yield handsomely..... For the week ending October 1st the amount of gold exported has been $17,800 currency. Of this the Rocky Mountain Bank sent $11,000, Warren, Hussey & Co., $3,500, and George T. Clark & Co. the balance..... Yesterday, while some of the miners were sinking a shaft on the May lode on Four Mile Hill, below Black Hawk, they came on to a vein about ten inches wide, of some of the richest silver ore that has ever been discovered in these mountains. The mine is the property of Mayor Teats, who took a chunk of the ore to the Excelsior mill. Mr. Reese looked at it, and immediately said that it contained large quantities of chlorides of silver, the first he had seen in any specimens of Colorado ores. He scraped a little of it on to the point of a knife, and, bringing the blowpipe to bear on it, soon developed the pure silver. The chlorides are scattered through the ore, in places running in seams of an inch or more in width. They contain 80 per cent. of silver, and the large piece of ore, weighing several pounds will, every bit of it, go as high as $1,000 to the ton. Besides the chlorides, it contains sulphuret of silver and green carbonates of copper. The shaft on the May lode is down thirty feet, and the crevice contains about twenty inches of ore, including the vein from which the chloride specimen was taken. This is, most undoubtedly, one of the most promising discoveries that has been made this summer, and it must be a matter for congratulation to the inhabitants of this city and Black Hawk, that they have a district so rich in silver ores to add to the already unequalled mining attractions of their immediate neighborhood. The Excelsior mill will have its barrel amalgamators ready in about one week from date, when Kraus, Reese & Buckner will probably subject a few tons of May ore to their "California" process. The piece of ore that we have described above, was this morning added to the mineralogical museum at the Miners' Institute, where any one, whose ideas of chlorides of silver are confused, can have them cleared by inspecting it. Some of the lodes in the Snake River country are said to contain chlorides of silver, but we have not heard before of any on this side of the "range." ....From the Georgetown *Miner*, Oct. 10, we gather the following: We are pleased to be able to announce that recent researches for salt and fire clay have resulted in discovering a large, fine spring of saline water, and a bed of fire clay eighteen inches in thickness, in Salt Lick gulch, Lake district, Summit county. The gulch is situated 30 miles from here, on the Blue river, and about 12 miles from Breckinridge. The spring is estimated to yield 1000 barrels of saline water per day, is situated so that the water can be run direct from the spring into vats, without the use of pumps. It is but 12 miles from the Montezuma saw mills, where lumber can be obtained for the erection of vats for solar evaporation. The per centage of salt we have not obtained, but will give the figures to our readers as soon as they can be procured. The fortunate owners of this property are C. W. Brainel, Esq., Dr. Bell, and others, and they intend to commence operations for manufacturing this essential article at as early a day as possible. They have pre-empted 320 acres of land, upon which the spring and fire clay are situated.....Dr. Johnson, superintendent of the smelting works, is making arrangements for a pair of immense Cornish rollers, 17 by 28 inches, capable of crushing from 25 to 80 tons of ore per day. This will prove a great help to the works, as the crusher they have in use will not reduce a ton in the same length of time.....Col. Hale is taking ore out of the Griffith lode, and we are informed that it looks better than ever before. We are glad to learn that the ores of this lode are to be worked for silver. The Magnet lode, one of the most promising discoveries made this season, is believed to be an eastern extension of the Griffith.....The first snow of the season fell on Thursday night last.

Arizona.

We are in receipt of Gov. McCormick's last message to the Territorial Legislature. We copy from it the following relative to surveying and mining: By an act of Congress approved March 2d, of the present year, the Territory was detached from the surveying district of New Mexico and added to that of California. Next to making the Territory a distinct district, this is probably the most convenient arrangement that could be had, as our relations to California are far more intimate, and our means of communication with that State are far better than with New Mexico. I have urged upon the Surveyor General, whose office is in San Francisco, and also upon the Commissioner of the General Land Office at Washington, the importance of beginning surveys here, both of agricultural and mineral lands, at the earliest practicable moment, and I am assured that there will be no unreasonable delay. I have to regret that certain surveys begun upon the Gila last winter, by a deputy from the office of the Surveyor General of New Mexico, were suspended, as alleged, for the want of protection, which I think would have been afforded upon application to the proper parties. The transfer of the Territory to California would, however, have probably led to a suspension of the work early in the spring. The announcement in my message to the last Assembly that the Territory had been created a land dirtrict was premature. It was not so created until March last, when, as I am informed, a Register and Receiver were nominated but I have not learned of their confirmation by the Senate. It is to be hoped that they will be able to enter upon the discharge of their duties here at an early day.....The appearance of sulphurets in many of the lodes opened in Central Arizona necessitates the provision of new machinery for the reduction and separation of the ores, and until this can be supplied most of our quartz mills will be idle. Parties who have made tests of the sulphurets, upon a small scale, pronounced them exceedingly rich, and have no doubt they can be worked in large quanties to great advantage. Some of these are now in California, selecting machinery, and their return here is expected at an early day, when mining operations will be vigorously, and I doubt not, successfully prosecuted; although no great success can be looked for until the roads are so entirely safe that parties can visit the Territory without endangering their lives; tranportation can be had at reasonable rates; agriculture prosecuted without constant interruption, and capital from abroad be induced to come to the aid of our mine owners, who, although energetic and hopeful, have, through the obstacles with which they have had to contend owing to the condition of the country, in many cases entirely exhausted their means. Operations upon the copper mines at Williams' Fork, which have been generally suspended during the summer owing to the remarkably low price of copper, and for other reasons, will, I am informed, be renewed upon a large scale during the present fall and ensuing winter. The great value of the mines was never more apparent; and the same may be said of the gold and silver lodes along the Colorado from the Gila to El Dorado canon, upod several of which much work has been performed within the year. In Southern Arizona the Indian disturbances and other causes, as here, have to a great degree interrupted operations in the mines, but the owners have not lost confidence in their wealth, and are eager to proceed in their development at the earliest practicable moment. The proposed opening of the port of Libertad, in Sonora, will, it is believed, render the shipping of copper ore from Southern Arizona, a profitable enterprise, and otherwise prove a source of great advantage to the people of that part of the Territory who cherished a lively hope that the government, having extended its lines upon the north, will take early measures to acquire a portion of Sonora, at least sufficient to bring the ports of Libertad and Guaymas under the American flag; an acquisition of territory likely to prove far more profitable to the Union than that recently secured, and absolutely essential to the proper development of a large and important part of Arizona.....The *Miner*, of August 31, says: A. O. Noyes is sinking a shaft on the Senator lode; also one upon the Montgomery.....Messrs. Bowers, Rush, and others, who have secured 800 feet on the southwest end of the Dividend lode, will begin work next week. The ore will be worked at the Ticonderoga mill.....Sagebrush Johnson has quit work on the Accidental, and gone to Wickenburg or California. R. Winning and others are running his water arastra on Lynx Creek.....Colonel Tyson is at work on the Sterling.....The Tuscon *Arizonian*, of August 31, says: Mr. Rush and others interested in the Dividend mine, Big Bug district, are about commencing to work on it, and have leased the Ticonderoga mill. A shaft has been sunk sixty feet, and sixty tons of rock have been run through the Big Bug mill, yielding twenty dollars per ton in free gold, and the concentrations containing an average of seventeen and a half dollars per ton of rock, according to the assay of Mr. Berger.

Utah.

James W. Mills writes from the new Sweetwater mines to the Gold Hill (Nevada) *News*, under date September 16: We are some three hundred miles from Salt Lake, and about thirty miles from South Pass, near the Wind River Mountains. The Pacific Railroad will pass within fifty or sixty miles of these mines, and Col. Dodge, the surveyor, tells me it will be built through this section within two years. These mines, I think, will prove one of the best quartz mining regions ever found. There seems to be no end to the quartz—and good quartz at that. The ledges are generally large, say from one foot to twenty feet thick, and mostly gold with slight traces of silver. The advantages for milling and mining are good, there being a plenty of wood and water, and no end to the supply of wood. I will say to you and your friends connected with me, that this place suits me better than any mining camp I have ever seen, or ever expect to see—for there is more good quartz in the same space than I have ever seen in Nevada or California. If my judgment does not deceive me, it will surpass in time Gold Hill and Virginia City. I have now been here twenty-eight days, and have been hard at work all the time. When we came into these mines, there were forty men with me, all good men, but the Indians were so bad that we were compelled to prospect in large parties—and for that reason our claims are small—each man locating for himself—the party not allowing locations to be made for any person not present in person. I send you a sample of ore taken from one of my claims, at a depth of twelve feet, where I cut the ledge at a thickness of six feet. It is all good quartz, which is believed can be made to yield from thirty to five hundred dollars per ton. The samples I send you are selected. I shall remain in this camp this winter, and by spring will try and have a shaft down fifty or sixty feet on my claims. The *News* adds: The sample of ore sent, as mentioned in the above, was assayed in Gold Hill, and yielded at the rate of $100 in gold per ton.

Oregon.

A correspondent of the Dallas *Mountaineer* writes from Canyon City: The quartz mill of the John Day Quartz Mining company has arrived, and will be in working order in two weeks, when we all expect good results, as a large amount of rich quartz is being taken out of various ledges. Sawyer and Marbold struck one of the richest quartz loads in our county, situated on the south side of Elk Creek. It prospects from $250 to $1,000 per ton. The citizens of Canyon City and vicinity are building a wagon road to the new post. Mr. James Cozart has passed over the road with his teams heavy loaded for the camp. No big clean-ups, but miners are doing very well.

Central America.

The value of the Javali mine, which at present belongs to the Central American Association (limited), but which we are informed will soon be brought out as a separate company, has lately been very strikingly proved, by the purchase for a large sum, of the continuation of the lode by a New York company, says the London *Mining Journal*. This portion of the Javali lode was offered to the agent of the Central American Association in Apail last, but the offer was refused, and that company already possesses 1,000 yards of the lode.

Canada.

The Madoc *Mercury*, Oct. 12, says: The past has been another comparatively quiet week, all hands patiently awaiting the commencement of work by the crushing machines at Eldorado, which are not yet in active operation, owing to unavoidable delays incidental to bringing the machinery from a distance. Messrs. Scott & Taylor's mill is expected, however, to be in complete working order by Monday next. Meantime, work is not abandoned, and fair shows of gold have been reported to have been obtained, during the past week from three of the shafts at Eldorado—the Brantford & Goderich, the Royal Canadian, and the Excelsior. We also learn that several good shows of both gold and silver, which have been proved by assays, have been obtained by Messrs. Sanderson & Unwin, from their shafts on lot 24 in the 6th concession of Madoc. They are practical miners, who have been at work for several months past, and who do not pretend to have found the precious metals in paying quantities as yet, or sufficient to invite the inspection of their works by speculators or parties seeking for specimens of Madoc gold. Contractors to sink new shafts are also being inquired after, which affords proof that all faith in the auriferous products of this region is not yet given up. A meeting of miners, to petition Parliament to remodel the mining regulations, was held at the Golden Hotel, Upper Eldorado, on Saturday last. A committee to draft resolutions was appointed, who will report to another meeting to be held this (Saturday) evening at the same place.

British Columbia.

The Walla Walla (W. T.) *Statesman* has the following: Mr. Dacree, just down from Kootenai, brings highly favorable reports from the mines. The party of twelve men who went out early in the season to prospect the Bend of Kootenai, had struck it rich, and report the whole strip of country extending from the Kootenai

river to the Pen d'Oreille as abounding in gold. They were endeavoring to keep the discovery as quiet as possible until such time as they would be able to notify their friends and secure them in possession of the best claims. The news, however, has leaked out, and already parties are on the way to the new diggings. The claims on Finley creek have paid well this season, and miners who desired to leave for the new discovery have sold their claims for as high as $1,800. Altogether, mining operations on the Kootenai have paid better this season than in any former year, and as a consequence the miners feel greatly encouraged. Large numbers of persons left Walla Walla last week for the new mines on the Kootenai. The report of the discovery reached Walla Walla on Tuesday evening, and on Wednesday morning at daylight, gold hunters were on their way to the "basin." ..... A copper lead has been discovered near New Westminister. Gold has been discovered back of Buzzard Inlet, in the mountains.

Australia.

We have the following monthly summary of news, by way of London, from Melbourne, bearing date, July 27: A new rush on a very extensive scale, has just made its way to the Alexandria diggings, a fresh gold field just opened up on the Goulburn river, where many men are doing well. A new and extensive gold field, near Rockhampton, in Queensland, has within the last few weeks attracted many diggers. Some fine copper deposits have also been discovered at Bunninyong, near Ballarat. The fields at Ballarat, as well as in other districts, have been exceedingly good; one company, the Hand and Band, obtaining no less than 1,500 ounces, of gold in two days. The dividends paid by registered mining companies in this district last week amounted to nearly £13,000, and the average of the last five or six weeks would give an annual revenue from dividends alone of over half a million sterling. The export of gold for the half year ending July 26, considerably exceeds the export for the corresponding period of last year. The excess for the coming half year will probably be still greater. To July 26, last year, the amount was 986,475 ounces, of which 181,057 ounces were the produce of New Zealand; and to July 26, this year, the amount is 995,144 ounces, of which only 114,282 ounces are from New Zealand. The difference in favor of 1867, therefore, without regard to New Zealand, is 8,669 ounces.

COPPER.

California.

The Marysville *Appeal* of the 18th inst. says: Mr. George W. Squires, who resides on the south side of the Buttes, in Sutter county, exhibited to us yesterday some specimens of the richest copper ore we have ever seen in California. While hunting in the Coast Range, Mendocino county, he came across a ledge of copper ore, which, if the specimens we have seen are a fair criterion, is certainly the richest found in the State. He represents the ledge as being from thirty to thirty-five feet in width, and of great length. The croppings from whence the specimens were taken are from twenty to twenty-five feet above ground. Good judges here pronounce it the richest copper ore ever exhibited in this city. The ledge discovered by Mr. Squires is about ninety miles from Marysville.

MARKET REVIEW.

Gold and Silver Stocks.—The following are the quotations at the board:

	Bid.	Asked.		Bid.	Asked.
Alameda Silver	—	1 50	Liberty Gold	2	4
American Flag	60	80	Manhattan	100 00	— —
Atlantic and Pacific	—	1 00	Midas Silver	50	1 50
Bates & Baxter Gold	—	1 00	Montana Gold	12	18
Benton Gold	65	75	New York	95	95
Bobtail Gold	—	3 00	New York & Eld'o	1 85	1 90
Bullion Consolidated	—	1 00	Nye Gold	2	4
Columbian G. & S.	70	20	Owyhee Mining	9 00	20 00
Combination Silver	20 00	40 00	People's G. & S. of Cal	—	40
Consolidated Gregory	5 80	6 00	Quartz Hill	1 30	1 40
Corydon Gold	74	78	Reynolds Gold	1	4
Edgehill Mining	4 40	4 60	Rocky Mountain Gold	40	50
Gold Hill	—	4 00	Seaver Gold	—	11 50
Gunnell Gold	1 60	1 70	Smith & Parmelee Gold	3 90	4 00
Gunnell Union	25	45	Sonsenderfer	—	1 00
H'n G. & S. bs	—	90	Symonds Fork Gold	—	1 00
Harmon G. & S. bs	—	9 00	Texas Gold	—	12
Holcomb	5	10	Twin Riv. Sil.	—	60 00
Hope Gold	10	30	Vanderburg G.	—	75
Kipp & Buell Gold	20	45	Yellow Jacket	—	—
La Crosse Gold	53	55			

Copper Stocks may be quoted:

	Bid.	Asked.		Bid.	Asked.
Caledonia	....	10 00	Hilton	....	1 00
Canada	....	50	Isle Royale	....	6 00
Central	....	26 00	Knowlton	....	4 00
Charter Oak	....	3 00	Mendota	1 00	....
Davidson	1.60	1 35	Ogima	60	....
Evergreen Bluff	....	5 00	Rockland	....	7 00
Gardiner Hill	....	2 00			

Petroleum Stocks.

	Bid.	Ask'd.		Bid.	Ask'd.
Bearsheff Run	3 75	4 15	N. Y. and Alleghany	3 05	3 50
Buchanan Farm	42	44	Pit Hole Creek	40	70
Brevoort	50	75	Rynd Farm	14	15
Central	....	1 10	United Pet. Farms	10	20
Clinton Oil	1 30	1 60	United States	2 60	3 50
Excelsior	....	15	Union	1 75	2 25
Manhattan	....	15			

Miscellaneous Stocks.—Quicksilver M., 18; Pacific Mail, 145½@9½; Mariposa pref., 14½; Adams Express, 67@67½; C. S. Express, 68¼; Merch. Union Ex., 29@30; N. Y. Central, 111@111¼; Erie, 71¼@71 3-8; Reading Railroad, 97 3-8@97¾; Del. Lack. & W. Railroad, 111; Rutland Marble, 500; Walkill Lead, 41.

Government Stocks.—In the absence of a healthy home investment demand, dealers are not disposed to carry money securities, and their being prompt sellers tends to depress the market.

U. S. 6s, 1867	143 @ —
U. S. 6s, 1881, regular	111 @ —
U. S. 6s, 1881, coupon	111⅛@111⅝
U. S. 6s, 5-20s, 1862, regular	103⅞@104
U. S. 6s, 5-20s, 1862, coupon	112⅛@112¼
U. S. 6s, 5-20s, 1864, coupon	109 @109¼
U. S. 6s, 5-20s, 1865, coupon	109¼@109⅜
U. S. 6s, 5-20s, c., July, 1865	106¼@106⅞
U. S. 6s, 5-20s, July, 1867, coupon	106¾@106⅞
U. S. 5s, 1871, reg	— @117
U. S. 5s, 1871, cpn	118½@ —
U. S. 10-40s, regular	100 @100¼
U. S. 10-40s, coupon	100⅜@100¾
U. S. 7-30s, June, small	104⅞@105
U. S. 7-30s, July, small	104⅞@105

Foreign Exchange.—The decline in gold appears to have induced remitters to come into the market for bills. We quote:

London, (prime bankers') 60 days'	108¾@108⅞
London, (prime bankers') sight	109¼@109⅝
London, prime commercial	— @ —
Paris, (bankers') long	5.20 @5.18¾
Paris, (bankers') short	5.17½@5 16¾
Antwerp	5.21½@ 5.20
Swiss	5.21½@ 5.20
Hamburg (bankers')	35¾@35⅞
Amsterdam (bankers')	40⅛@41
Frankfort (bankers')	40⅜@40⅝
Bremen (bankers')	78⅛@78½
Berlin (bankers')	71⅝@71¾

Gold continues weak, opening at 142¼, selling down to 141⅞, and reacting to 142. The prospect that the coupons of foreign bondholders will be settled for without any remittance of specie, has a depressing effect upon the premium. The treasury has not as yet commenced prepayment of the November coupons, although it is intimated as probable that payment may be commenced on Monday next. Cash gold is rather easier; loans are made at 1-32 to 3-32 per cent.

A San Francisco telegram dated the 19th inst., notes the sailing of the steamship Golden City for Panama, with $529,645 in treasure, $307,415 of which is for New York. Also the arrival of the steamship Sierra Nevada with $102,000 in treasure, together with the steamship Continental, from Mazatlan, with $100,000. Another dispatch dated the 18th, notices the clearance of the Fearless for Hong Kong, with $14,000 in treasure.

Copper has been very unsettled, and it is difficult to make a report. Small sales of Detroit have been made at 23¾@24, Baltimore at 23½, and Portage Lake at 23½ to 23¾. There have been no large sales made public.

Tin is entirely nominal. Straits, 25½, gold; English, 23¼, gold; and Banca, 27. Two to three hundred slabs of the latter kind sold on private terms.

Spelter and Lead.—No business whatever is reported. A quotation for both articles would be 6½@6¾, gold.

Pig Iron.—American is quoted $44 for No. 1. In Scotch Pig Iron some private transactions have been made. The quotation is $41@42½, according to quality, from wharf or yard.

Petroleum.—Business in both crude and refined in bond is limited, but prices generally are firm. We quote as follows: Crude (40@47 gravity) in bulk, per gallon, 14c.; crude do., in barrels, 20c.; refined, in bond, (110 test.) prime light straw to white, 32@33c.; refined do. do. standard white, 30c.; refined do. do. pr me white, 34@35c.; refined naptha, (60@63 gravity,) 20@20c.; residuum, per barrel, $3@3,62½.

THE SLATE TRADE.

NEW YORK, October 23, 1867.

Roofing Slates are active. Quarrymen are anxious to close out for the season, and are beginning to urge the sales. Prices rule about the same, though inclined to run lower for inferior qualities.

Vermont purple,	1st quality, per	square		$11 00@12 00
" "	2d "	"		10 00@11 00
" green,	1st "	"		11 50@12 50
" "	2d "	"		10 50@11 50
" red,	1st "	"		12 50@13 50
" "	2d "	"		11 50@12 50
Pa. blk & d'k blue,	1st "	"		10 50@11 50
" "	2d "	"		9 50@10 50

PRICES DELIVERED. PER SQUARE

On cars or boat at Buffalo	$11 50	per square.
Delivered in Cleveland	12 50	"
" Dayton	13 00	"
" Cincinnati	13 50	"
" Indianapolis	13 50	"
" Chicago	13 50	"
" St. Louis	14 00	"
" Louisville	14 50	"
" Detroit and Toledo	12 75	"

Intermediate, 75 cents per square less.
Red, $4 per square more.
New York Red, same as Purple.
NEW ORLEANS.—$19@20 per square.
CHARLESTON, S. C.—$15@16 per square.

THE IRON TRADE.

Domestic.—In American Pig the market is quiet; but in consequence of the small quantity on hand prices remain very steady. If the stock was greater there would be a perceptible decrease in price. Consumers hold aloof and show little disposition to buy. In Railroad Iron the market is firm but dull.

The sales this week have been few and in small lots. We no ice the sale of 90 tons of scrap iron vessel, at $45.

In manufactured iron the market is quiet and unchanged.

Foreign.—The condition of the iron trade in Great Britain, is satisfactory. The announcement was made in the Board of Trade returns for the week ending Oct. 5 of an increase to the amount of iron exports, of more than a million and a half, or about 29 per cent. in the exports for August. This is regarded as very encouraging. Pig iron shows a disposition to rise, though the market is quiet. In Swedish iron there is not much activity, and holders are somewhat disposed to meet buyers as to prices. In Scotch pig iron the market has been quiet during the week, and a moderate business only has been done. The price has further given way, the last price received from Glasgow being 54s. cash.

WEEKLY STATEMENT OF NEW YORK IMPORTS.

The following table shows the quantity and value of iron imports at the New York Custom House, for the week ending and including October 18, 1867:

	QUANTITY.	VALUE.
Iron, Hp., tons	28	$1,237
Iron, Pig, tons	2,857	43,378
Iron, R. R., bars	17,609	93,658
Iron, Sheet, tons	189	10,644
Iron, Tubes	3	1,307
Iron, other, tons	2,589	117,349
		$267,973

Lehigh Valley Iron Trade.

The following table shows the amount of Pig Iron transported over the Lehigh Valley Railroad for the week ending October 19th, 1867:

From.	Tons.	Total From Oct. 5, 1866.
Carbon Iron Co.	50	380
Lehigh Valley Iron Co.	60	250
Thomas Iron Co.	855	1,700
Lehigh Crane Iron Co.	540	1,170
Allentown Iron Co.	645	1,165
Robert Iron Co.	260	525
Glendon Iron Co.	660	840
Other Shippers	230	610
Total	3,300	6 640

Marquette, Michigan, Iron Trade.

The following are the receipts of ore and pig iron at Marquette up to, and including Saturday, October 12, 1867:

IRON ORE.	Week.	Total.	PIG IRON.	Week.	Total.
Pitts. & L. Aug. Fn Co.	1,102	49,940	Morgan Fn Co.	65	4,651
Edwards' Mine	....	3,631	Greenwood Iron Co.,	194	4,790
Cleveland Iron Co.	575	54,166	Hancroft Iron Co.	81	2,432
Marquette Iron Co.	145	5,563	Collins Iron Co.	71	3,914
Lake Sup. Iron Co.	2,500	98,764	Michigan Iron Co.	53	3,858
New England Iron Co.	....	8,516	Iron Cliffs Co.	....	57
Washington Iron Co.	621	21,201			
Jackson Iron Co.	....	139	Total, pig iron	464	19,742
Ore to local furnaces	1,158	21,588	Total Ore and Pig	6.657	162,820
Total iron ore	6 193	243,078			

The following is a statement of the amount of Iron ore shipped from the port of Escanaba, Lake Superior, since last report, and the total amount shipped thus far during the season, October 5, 1867:

Where from.	Since Sept. 28.	Prev'ly rep'd.	Total.
Cleveland Mines	2,674	28,674	31,348
New York Mines	2,401	56,661	59,062
Sackson Mines	9 896	79,703	89,599
Iron Mountain	....	2,301	2,301
Total	14.971	147,339	162,310

SAN FRANCISCO IMPORTS OF IRON.

The subjoined table gives the imports of Iron at San Francisco from September 17 to September 25, 1867, inclusive:

Old Iron	37	Sheet, no.	67
Railroad bars	1,025	" cases	53
Material, packages	1,796	Tubes, no.	398
Plates, no.	327	" bundles	14
Safes, no.	21	Brackets, no.	24
Pipe, no.	2,036	Bar, no.	8,522
" packages	1,098	" bundles	4,425
Hoop, bundles	1,266	English Pig, tons	245
" cases	20	American Pig, tons	80
Sheet, bundles	1,567		

Shipments of Iron to the United States from Liverpool.

The following are the shipments of iron to the United States from the port of Liverpool, for the week ending Oct. 5th:

IRON, BAR AND BOLT, Tons.—New York 341, Philadelphia 1.
IRON CASTINGS, Tons.—Charleston 26, New York 3.
IRON, HOOP, Tons.—Boston 19, New Orleans 28, New York 161, Philadelphia 14, San Francisco 16.
IRON, PIG, Tons.—New York 1,176.
IRON, PLATE, Tons.—Boston 23.
IRON, ROD, Tons.—New York 195.
IRON, SHEET, Tons.—Boston 112, New York 219, San Francisco 32.

It is calculated that Pennsylvania contains coal enough to supply 20,000,000 tons annually for the next 650 years.

A number of capitalists, of whom Mr. John Best of Williams township is the spirit mover, contemplate the erection of a large and extensive blast furnace, near the chain dam, and on the line of the Lehigh Valley road. The stock is nearly all promised, and it is expected that the work of erection will soon commence. The ore and lime are in the neighboring fields, while the situation affords ample room for the dross. An informal meeting was held last evening, and all things turned out promising. This makes the fourth new furnace proposed, or in course of erection, in the Lehigh Valley. When finished, the scene will present one grand array of flaming stacks throughout, and the fame of the Valley will proportionately increase.

Market Prices.

NEW YORK, Oct. 25, 1867.

DUTY.—Bars, 1 to 1½c. per lb.; railroad, 60c. per 100 lbs.; boiler and plate, 1½c. per lb.; sheet, band, hoop and scroll, 1¼ to 1¾c. per lb.; pig, $9 per ton; polished sheet, 3c. per lb. Payable in gold.

Anthracite, No. 1, best	$44 00@45 00		6 to 12x¾ to 5-8	165 00
" " 2x, firy	40 00	41 00	Common Iron	
" Grey Forge	35 00	38 00	¾ to 2 in. round and sq.	95 00
Scotch Pig, from vessel	41 00	43 00	1 to 6 in. wide by ¾ to 1 th.	95 00
Charcoal, coal blast	50 00	67 00	1 to 6 in. wide x 1¼ to 5-16 th.	105 00
Old Wrought scrap, fm yd.	48	....	¼, 9-16, 5-8, 11 16, r'd & sq.	105 00
" " fm. vsl.	46	....	2½ to 3 inches	105 00
English rails, gold	52 50	53 00	Refined Iron.	
American " at works	78 00	80 00	¾ to 2 in. r'd and sq.	160 00
Nails and spikes	5 75	....	1 to 6 in. wide x ¾ to 1 th.	160 00
Old Railroad Iron	49 50	50	3¼ and 3½, round and sq.	115 00
Hoops, ¾ per ton		$190 00	Rods—5-8 and 11-16, round &	
" ¾ "		160 00	sq., per ton	105 00
" ⅞ "		150 00	½ and 9-16 round & square.	110 00
" 1 "		140 00	7-16, round and square	120 00
" 1¼ "		137 50	⅜, " "	125 00
" 1½ to 2 per ton		137 50	5-16, " "	130 00
Scroll Iron—⅝x14 per ton		180 00	¼, " "	135 00
" 12 "		170 00	3-16, " "	165 00
" 10 "		160 00	Horse Shoe Iron	127 50
" 3-16 "		159 00	Band—1 to 6 in. x 3 16 to No.	
" ¼ "		140 00	10	132 50
" ¾x14 "		160 00	1 to 6 in. x No. 11 and 12	132 50
" 12 "		160 00	Ovals and half Rounds.	
" 10 "		150 00	⅜ to 1½	127 50
" 3-16 "		140 00	⅝ & 11-16	132 50
" ¼ "		125 00	½ & 9-16	137 50
" ⅞x14 "		150 00	Nail Rods, per lb.	
" 12 "		150 00	"	9@10⅜
" 10 "		140 00	Norway Shapes	8¾c
" 3-16 "		135 00	Spring Steel	10¼c
" ¼ "		132 50	Tire ⅞ to 1¼x¾ & 5-16	10¾c
Swed'h Fn, ord'y sizes, ⅞ to 2 in. sq., per ton		155 00	Toe Cork Steel	10¾c
1½x⅜ to ⅝ and ¾ in sq.		160 00	Sleigh Shoe Steel	10¾c
1¼x⅜ to ⅝		165 00	Plow Steel—6 to 14x1¼ to ⅞	11c

[From Boston Shipping List.]

BOSTON, Oct. 23, 1867.

Swedish—common ass'd	$150@155	Scotch Pig, No. 1	....
English—com	95 100	Gartsherrie	$45@46
do refined	105 110	No. 1, other brands	43 45
do sheet, per lb	6½@10c	American, No. 1	42 48
Russia, sheet	19@20c		

PHILADELPHIA, Oct. 23, 1867.

Anthracite Pig, No. 1,	$44 00@$45 00	Hoop Iron, 1 and up	145 00@ .. ..
do do No. 2,	40 00 42 00	" ⅞	150 00 .. ..
do do No. 3,	35 00 38 00	" ¾	160 00 .. ..
Charcoal Wheel	50 00 55 50	" 5-8	210 00 .. ..
" Blooms	95 00 100 00	" ½	240 00 .. ..
Scotch Pig (by cargo)	43 00 45 00	Nails and spikes	5 40 .. ..
Railroad Bars (Am.)	80 00 85 00	" 4d	6 90 .. ..
Refined Bar	85 00 90 00	" 3d	7 40 .. ..
Common "	80 00 85 00	" 3d, fine	7 90 .. ..
Band Iron, 1¼ to 6 / 12 " 3-16	115 00	125 00	Boiler Rivets	7½c. per lb.
Hoop Iron, 1¼ and up	140 00		Railroad Spikes	5½@6c. per lb.

LONDON, Oct. 4, 1867.

(From the London *Mining Journal*.)

Bars, Welsh in Lond.	£6 10 0	@.. ..	Do. railway, Wales.	£5 10 0	@ 6 0 0
Ditto to arrive	6 10 0	.. ..	Do, merch. Tyne or		
Nail rods	7 0 0	7 10 0	Tees	6 10 0	.. ..
" Stafford in Lond.	7 10 0	8 10 0	To arrive	10 5 0	.. ..
Bars	7 10 0	9 10 0	Pig, No. 1, in Clyde	2 15 3	3 2 0
Hoop	8 10 0	9 12 6	Do. f.o.b. Tyne, Tees	2 9 6	.. ..
Sheets, single	9 5 0	10 0 0	Do. Nos 3, 4, f.o.b. do	2 6 6	2 7 0
Pig, No. 1, in Wales	3 15 0	4 5 0	Railway chairs	5 10 0	5 15 0
Refined metal, ditto	4 0 0	5 0 0	" spikes	11 0 0	12 0 0
Bars, common, ditto	5 15 0	6 0 0	Indian Charcoal Pigs		
Do. Swd. in London	10 5 0	—	in London	7 0 0	7 10 0

Iron Items

The Hampton Furnace property situated in Lehigh county, Pa., is to be sold Nov. 9th, 1867.

The amount of black-band iron ore shipped over the Mill Creek Railroad for the week ending Oct. 12, 1867, was 106 10 tons; previous, 3,532 04 tons; total, 3,638 14 tons.

There is an iron establishment in France which employs 10,000 people and works 110,000 tons of iron a year. Two others employ over 14,000 together, and produce annually 140,000 tons of steel and iron.

The iron mines at Marveva, in Canada, are proving very rich.

During the month of August 65 tons of Pig Iron were shipped from the Eastern ports to San Francisco, making a total for 1867 of 1,104 tons, against 2,303 tons for the same period of 1866.

According to the *North British Mail*, there are no fewer than from twenty to thirty thousand men connected with the iron trades on the Clyde at present out of employment. This state of affairs is affirmed to be owing, to a large extent, to the rapid progress which has been made by continental manufacturers, and to the much cheaper rate at which they can turn out their work.

Enormous deposits of black magnetic oxide of iron have been discovered on the Conney creek, in West Donegal township, Lancaster county, near the Susquehanna river, and but a few miles from Elizabethtown, Pa. The ore is now being mined by Prof. Eli Bowen, who has taken out two or three hundred tons. It is described as being of uncommon richness and value. Most of it is loose ore, resembling the ores of Cornwall, in Lebanon county. In view of the proposed erection of steel works there, this discovery may be of great advantage to that region.

The London *Mining Journal* says: The Steeple Aston Iron Ore company (limited), has been formed for the purpose of developing two rich deposits of hematite ironstone, estimated to be capable of yielding 2,000,000 tons of that mineral; and it is stated that an engineer is willing to contract to raise it in daily quantities of from fifty tons upwards, at a cost which will produce to the company a nett profit of about 6s. per ton. The ironstone is stated to be of that quality required to make No. 1 pigs, and contains a large percentage of metallic iron.

The question of the manufacture of iron is now occupying considerable attention in South Australia, the iron ores of this colony being unbounded in quantity, lying close to the surface of the ground, and of extraordinary richness, some of them ninety per cent. The difficulty is want of coal, but there are inexhaustible forests of wood for smelting, and even if coal had to be imported from New South Wales, the extreme richness of the ores would, doubtless, more than make amends for the extra cost of fuel.

During the first six months of this year the quantity of iron manufactured in France was 605,084 tons, as compared with 633,958 tons in the corresponding six months of 1866, being a decrease of 28,876 tons. There was also a falling off in the making of pig, the quantity produced in the first half of this year being 423,554 tons, as compared with 454,406 in the corresponding half of 1866, being a decrease of 24,552. These figures show that the iron industry of France has suffered equally with Great Britain from the general depression which has prevailed for some time past.

The total product of the Lake Superior iron mines last year 306,202 tons of ore. The reasons for the exceedingly rapid development of these mines since the year 1855, when the shipments of ore were 1,445 tons—are many and obvious. The deposits are immense, easily worked, and said to be nearly free from those noxious elements which render the flux of most iron or ores difficult and expensive. None of the mines, moreover, are over thirty five miles from cheap water transportation, while most of them are only fifteen or sixteen miles distant.

We have the following interesting items from the Lake Superior region: There have been two new openings made at the Cleveland mine recently, developing a body of granular and slate with an excellent show for a continuous vein of the ore. The usual test pits have been sunk, and the gratifying discovery made that the beds are rich and promise an abundant yield. The work on the location is averaging four thousand five hundred tons per diem, although during the past two or three days the stormy weather has prevented active labor in connection with mining.....In prosecuting the development of the vein of rich ore, recently discovered at the Champion location, it is found to be more extensive than was even at first anticipated. At either end of the course of the vein, two thousand feet apart, test pits have proved the existence of the magnetic ore, and through eight hundred feet of the same the vein is known to be continuous. The ore is a magnetic oxide of about seventy per cent. of metallic iron.

THE COAL TRADE.

Domestic.—The market for this week is more steady, manifesting more briskness in the retail than in the wholesale trade. The great demand for the smaller sizes continues, increased by the approaching close of navigation. The demand for the larger sizes, though not equally good, is fair, and sufficient to relieve the market of its present stock. Foreign is active and scarce. Prices and freights are firm, with but little change. Our correspondent at Wyoming says that the want of transportation is a great drawback to the trade of that section. The fifty-fifth auction sale of the Delaware, Lackawanna and Western Railroad Company will take place next Wednesday, when 65,000 tons of Scranton Coal will be sold.

The following Table shows the quantity of Coal shipped over the principal

roads for the week ending October 19th, 1867, compared with that shipped the same time last year:

	1866. WEEK.	1866. TOTAL.	1867. WEEK.	1867. TOTAL.	DECREASE.
Phil. & Reading R.R.	73,062	3,101,497	77,226	2,732,485	369,012
Schuylkill Canal	32,734	1,192,368	35,369	861,510	270,858
Lehigh Val. R. R.	35,799	1,531,543	47,217	1,663,782	132,238
Lehigh Canal	36,283	871,963	24,223	808,695	63,268
Del & Hudson	30,256	1,101,193	35,340	1,113,798	12,594
Union Coal Co. Rail	66	784	182	7,889	.....
" " " Canal	286	2,035	2,898	27,069	.....
Scranton North	8,789	343,492	14,145	379,918	36,419
Scranton South	21,715	861,424	20,656	1,014,165	189,160
Penn'a Coal Co. Rail	16,985	350,596	20,244	670,041	329,448
" " Canal	948	21,465	355	18,686	2,779
Wyoming North	.....	87,721	.....	35,193	52,528
Wyoming South	12,930	395,178	15,722	290,041	105,137
Shamokin	.....	455,943	.....	372,057	83,916
Trevorton	.....	43,216	1,555	43,080	136
Short Mountain	2,861	80,932	3,782	60,912	20,020
L. V. Co	.....	.....	.....	.....	.....
Broad Top	.....	223,795	5,664	189,714	33,862
Williamsto'n	.....	83,793	4,150	97,291	43,788
Total	271,815	10,627,556	318,926	10,342,176	.....
1867	.....	10,342,176	.....	.....	.....
Decrease	.....	285,360	.....	.....	.....

Lehigh Coal Trade.

SHIPPED FOR THE WEEK ENDING OCTOBER 19, 1867.

SHIPPERS.	CANAL. Week. Tons.	CANAL. Total. Tons.	RAILROAD. Week Tons.	RAILROAD. Total Tons.
FROM MAUCH CHUNK.				
Lehigh Coal & Navigation Co.	....	....	....	....
Summit Mines	12,152	291,127	....	....
Room Run Mines	....	1,313	....	....
John Laubach & Co.	....	352	....	....
Other Shippers	....	....	....	....
Total	12,152	292,763	....	....
FROM B. M. REGION.				
John Counery	....	....	....	1,534
W. T. Carter & Co. (Coleraine)	460	10,989	2,298	73,627
Spring Mountain Coal Co.	469	5,517	2,024	111,713
Thomas Hutl & Co. (N. Y. & Lehigh Co).	455	10,405	2,257	84,090
Honey Brook Coal Co.	2,580	34,739	1,620	112,294
German Pennsylvania Coal Co.	623	8,476	1,221	32,171
Beaver Meadow (D. W.)	....	....	58	1,563
Other Shippers	....	....	....	175
Total	4,590	70,107	9,480	417,170
FROM MAHANOY REGION.				
McNeal Coal and Iron Co	195	4,452	1,937	79,695
Knickerbocker Anthr. Coal Co.	....	1,494	1,536	44,174
North Mahany Mines (Mahanoy Col. now B. & C.)	258	1,147	668	11,827
Delano do	....	1,140	....	33,872
Primrose Mines (Rathbun, Stearns & Co.)	....	....	....	25,625
Walter, Brothers & Co. (now Bedford & Cox)	....	82	....	....
Mount Etna Coal Co.	482	1,956	140	1,471
Trenton Coal Co.	....	184	....	1,609
Glendon Coal Co. (Glendon Colliery)	....	95	564	14,279
Thomas Coal Co.	93	1,677	448	26,231
Williams & Herring	....	189	115	10,001
E. S Silliman	....	....	2,062	87,770
East Boston	....	....	....	505
New Boston Coal Co.	....	....	1,175	22,559
Shamokin Coal Co.	....	....	....	4,202
Caledonia M. & M.	....	....	140	512
Other Shippers	....	....	....	116
Total	1,008	12,421	8,598	364,753
FROM HAZLETON REGION.				
A. Pardee & Co. (Hazleton)	1,931	62,276	4,502	114,651
G. B. Markle & Co. (Jeddo)	1,999	43,982	2,405	99,387
Wm. S. Halsey & Co. (Mt. Pleasant)	353	4,176	338	8,573
Buck Mountain Coal Co	1,459	25,250	1,870	40,606
Sharpe, Weiss & Co. (Council Ridge)	1,029	28,398	1,893	63,017
Coxe, Brothers & Co. (Cross Creek)	379	9,848	562	15,731
Ebervale Coal Co	1,404	30,717	1,067	53,865
Stout Coal Co.	744	18,056	622	26,464
Harleigh Coal Co.	1,044	18,950	1,458	33,554
Ashburton Coal Co.	....	1,582	....	422
East Sugar Loaf	....	....	3,651	117,603
Upper Lehigh C. Co.	639	12,235	1,825	43,581
Highland	856	13,264	1,526	18,051
Mount Hall	....	88	83	928
Woodside	131	756	176	1,278
Latimer	65	226	688	1,950
Other Shippers	....	....	....	10
Total	11,143	279,512	22,618	645,689
FROM WYOMING REGION.				
Newport Coal Co	....	3,533	....	783
Warrior Run Mining Co.	....	2,956	633	10,119
Parish & Thomas	187	10,363	1,676	36,631
New Jersey Coal Co.	525	7,089	469	13,926
Lehigh & Susquehanna Coal Co.	....	2,933	....	11,245
Germania Coal Co.	464	7,408	170	11,900
Franklin Coal Co	....	5,507	....	8,763
Audenried Impr'v't & Coal Co.	648	7,381	38	17,788
Valley Coal Co.	....	189	....	384
Wilkes Barre Coal and Iron Co.	2,678	67,715	880	50,953
Baltimore Coal Co.	393	14,972	....	30,156
Union Coal Co	....	5,323	182	7,889
Wyoming Coal & Transp'n Co.	....	6,989	270	17,664
Everhart Coal Co	....	2,618	....	1,994
Morris & Essex Mutual	....	....	200	9,929
H. B. Hillman & Co	....	....	56	6,972
Bowkley, Price & Co.	....	....	....	1,745
T. F. Hunt & Co	....	....	....	774
John Horton	92	370	....	....
Mineral Springs	....	....	....	4,301
Consumers	....	....	298	564
Plymouth Coal Co.	....	....	1,225	3,139
Enterprise Colliery, J. H. Swoyer	....	....	147	878
Washington Coal Co.	....	....	290	698
West Pittston	....	....	....	50
Other Shippers	132	9,458	....	....
Total	5,329	183,860	22,618	645,689
Grand Total	34,223	808,695	47,217	1,663,782
Total 1866	36,283	871,963	35,799	1,531,543
Decrease	2,060	63,268	.....	.....
Increase	.....	.....	11,418	132,238

Lehigh and Mahanoy Coal Trade,

For week ending Oct. 19, 1867.

NAMES OF SHIPPERS.	WEEK.	TOTAL.
Trenton Coal Co.	.....	1,794 02
Mount Etna	756 14	3,672 15
Mahanoy Coal Co.	711 15	12,015 05
Delano Colliery	.....	35,061 02
Glendon Coal Co.	511 01	14,244 08
Rathburn, Stearns & Co.	.....	25,431 01
E. S. Silliman	2,343 05	80,018 11
McNeal Coal & Iron Co.	2,298 07	84,178 18
Knickerbocker Coal Co.	1,336 02	45,687 11
Thomas Coal Co.	547 04	27,613 18
Williams & Herring	115 15	10,178 13
Shamokin Valley Coal Co.	.....	4,202 06
New Boston	1,173 12	22,919 08
Caledonia	140 15	512 04
Other shippers	.....	26 17
Total	9,934 08	376,564 19
Corresponding week last year	4,436 01	287,482 10
Increase	5,498 07	89,082 09
Decrease	.....	.....

Schuylkill Coal Trade.

BY RAILROAD & CANAL, FOR WEEK ENDING OCT. 21, 1867.

	Railroad.	Canal.
St. Clair	36,044	.....
Fort Carbon	7,902	.....
Pottsville	945	.....
Schuylkill Haven	21,828	.....
Auburn	3,421	.....
Fort Clinton	7,086	.....
Total for week	77,226	35,369
Previously this year	2,655,259	796,141
Total	2,732,485	831,510

Prices of Coal by the Cargo.

[CORRECTED WEEKLY.]

At New York, October 25, 1867.

Schuylkill R. A., choice	$5 75@$6 00	Lehigh Broken	5 12 ....
" Ordinary	5 25 5 50	" Egg	5 12 ....
" W. A., Lump	5 25 5 50	" Stove	5 20 ....
" Steamboat	5 25 5 50	" Chestnut	4 20 ....
" Broken	5 25 5 50	Wilkesbarre Lump	5 25 ....
" Egg	5 25 5 50	" B'ken & Egg	5 25 ....
" Stove	5 25 5 50	" Stove	5 50 ....
" Chestnut	4 00 4 25	" Chestnut	4 75 ....
Lehigh White Ash Lump	5 37		

SPECIAL COALS.—DEALERS' QUOTATIONS.

Diam'd Vein R. A., Sch'kill	....	New England Red Ash	$5 25 ....
Locust Dale W. A., "	....	Broad Mountain	5 25 ....
Honey Brook " Lehigh	5 50	Wyoming	5 00 ....
Harleigh " "	5 50	McNeal Co.	5 50 ....
Spring M'n " "	5 50	George's Creek (Balt.)	5 25 ....
Sugar Creek " "	5 50	" " (Georget'n)	4 75 ....
Ashburton " "	5 50	Locust Mount'n (Repplier)	5 50 ....
Fulton White Ash	5 50	Duncan Red Ash "	6 00 ....
Stout "	5 50	Wharre Coal & Iron Co.	5 25 ....
Old Co's " "	5 50	New Burgh Orrell Gas Coal	9 00 ....
Buck Ridge W. A., Sh'kin	5 00	Despard Gas Coal	9 00 ....
H. Heils, E. S'klin, Lorb.	5 50		

Dealers in these Coals may be found in our advertising columns.

At Philadelphia, October 25, 1867.

Lehigh Lump and St'mb't	$5 00@....	Schuylkill Chestnut	2 75 ....
" Broken and Egg	5 00	Locust Mount Lump and Steamboat	4 25 ....
" Stove	5 00	" Broken	4 25 ....
" Chestnut	3 75	" Prepared	4 25 ....
Schuylkill R. A. Prepared	4 25 4 50	" Chestnut	2 87 ....
" Chestnut	2 75	Lorberry Coal	4 25 ....
" W. A. Lump and Steamboat	4 25	Shamokin	4 75 ....
" Broken	4 25	Franklin, (Lykens Valley)	4 75 ....
" Egg and Stove	4 25	Broad Top	4 75 ....

Scranton Coat at Elizabethport, October 25, 1867.

(Corrected weekly by D. L. & W. R. R. Co.)

Lump	$4 25@....	Egg	4 75 ....
Steamer	4 40	Stove	5 00 ....
Grate	4 40	Chestnut	4 40 ....

Prices for Pittston Coal at Newburgh, October 25, 1867.

(Corrected weekly by Penna. Coal Co.)

Lump, per ton of 2240 lbs.	$4 70@....	Egg " " "	4 70 ....
Steamer, " " "	4 70	Stove " " "	4 90 ....
Grate " " "	4 70	Chestnut " " "	4 20 ....

70 cents additional to New York.

Lackawanna at Rondout, October 25, 1867.

(Average contract prices for year.)

Lump	$4 70@....	Stove	5 25@....
Steamer	4 80@....	Chestnut	4 30@....
Grate	5 00@....	Pea	4 00@....
Egg	5 10@....		

Lehigh Coal at Elizabethport, October 25, 1867.

Lump	5 50@....	Chestnut	4 50 ....
Steamboat and Brokenc	5 25	Stove	5 50 ....
Egg	5 25		

At Baltimore, October 25, 1867.

Wilkesbarre & Pittston W. A. by cargo or car	$5 25@5 50	From wharf or yard, 75c. to $1 per ton additional.	
Lykens Valley R. A. by cargo or car	5 50@5 80	Retail, del'd, per 2,240 lbs	7 00@7 50
Sunbury & Shamokin R. or W. A. by cargo	5 00 5 55	George's C'k and Cumberland f. o. b. at Locust P't	5 00@....

At Havre de Grace, Md.

Wilkesbarre or Pittston, W. A., on board	$4 85@5 10	Sunbury or Shamokin, R. or W. A., on board	5 00@5 10
		Lykens V'y, R. A. on b'd.	5 10@5 25

At Georgetown, D. C.

George's Creek and Cumberland, on board ..... $4 25@ 4 50

Wilkesbarre Coal at Elizabethport, October 25, 1867.

(Corrected by Wilkesbarre Coal & Iron Co.)

Lump	$4 50	Egg	4 75 ....
Steamer	4 50	Stove	5 00 ....
Broken	4 75	Chestnut	4 50 ....

Ten cents additional on shipments from Jersey City.

Prices of Provincial Coals.

[CORRECTED WEEKLY BY LOUIS J. BELLONI, JR., 43 PINE STREET.]

Duty $1.25 per ton.

Block House (on board)	$2 00 gold	Little Glace Bay	1 87½ "
Gowrie "	1 75 "	International Co.'s	1 75 "
Lingan "	1 75 "	Slack Coal, B. H.	75 "
Sydney "	2 25 "	" L. G. B.	1 00 "
Pictou "	2 25 "		

Prices of Foreign Coals.

Duty $1.25 per ton.

Corrected weekly by PARMELEE BROS., 32 Pine Street, N. Y.

Liverpool Gas Caking	$10 00	Liverpool House Orrel	19 00@20 00
" " Cannel	13 50	" " "	16 00@18 00

Per ton 2240 lbs., Ex. ship.

PRICES FROM YARD.

Liverpool Orrel, screened	$18@20	Liverpool Cannel, per'd	20 00@22 00

per ton 2000 lbs. delivered.

Coal Freights.

(Corrected Weekly.)

From Newburgh.

RIVER.	CO.'S BOATS.	EASTERN.	
Albany	50@....	Boston	1 75@.. ..
Barrytown	35	Bridgeport	1 12½.. ..
Catskill	35	Bristol	1 50 .. ..
Cold Spring	30	Dighton	1 50 .. ..
Cocymans	45	Fall River	1 45 .. ..
Coxsackie	40	Mystic	1 30 .. ..
Fishkill Landing	20	Hew Haven	1 12½.. ..
Greenbush	50	New London	1 25 .. ..
Haverstraw	45	Newport	1 45 .. ..
Hudson	35	Norwalk	1 12½.. ..
New York	70	Norwich	1 40 .. ..
Nyack	50	Pawtucket	1 65 .. ..
Peekskill	40	Providence	1 50 .. ..
Poughkeepsie	25	Stamford	1 12½.. ..
Rhinebeck	30	Stonington	1 25 .. ..
Saugerties	35	Warren	1 45 .. ..
Sing Sing	50		
Stuyvesant	40		
Tarrytown	50		
Troy	55		
West Point	30		
West Troy	55		
Yonkers	55		

From Rondout.

Boston	$1 90	New London	1 40
Bridgeport	1 25	Newport	1 60
Bristol	1 60	Norwalk	1 25
Dighton	1 55	Pawtucket	1 70
Fall River	1 60	Providence	1 60
Mystic	1 40	Stamford	1 25
New Haven	1 25	Stoningron	1 40
Norwich	1 55		

From Elizabethport.

Albany	$ 90@— —	New London	1 25@— —
Boston	1 75 — —	Newport	1 40 — —
Bridgeport	1 00 — —	New York	55 60
Fall River	1 40 — —	Norwalk	1 00 — —
Hartford	1 50 — —	Norwich	1 30 — —
Hudson	1 00 — —	Pawtucket and towing	1 50 — —
Lynn	— — —	Portland	1 60 — —
Middletown	1 25 — —	Portsmouth	2 15 — —
New Bedford	1 45 — —	Providence	1 40 — —
Newburyport	2 05 — —	Salem	1 80 — —
New Haven	1 00 — —	Taunton	1 40 — —

From Baltimore.

To Philadelphia	$1 40— —	Boston	2 25@ 2 50
New York	2 10 — —	Sound Ports	2 25@ 2 50
Washington	1 10 — —	Norfolk	1 00@— —
Annapolis	75 — —	Richmond	1 50@— —

From Washington, N. J.

Hackettstown	$ 58	Iron Dale	$ 1 19
Waterloo	81	Dover	1 24
Stanhope	90	Paterson	1 75
Port Morris	99	Pompton	1 75
Rockaway	1 32	Bloomfield	1 85
Denville	1 33	Newark	1 99
Boonton	1 44	Belleville	2 00
Little Falls	1 70	Communipaw	2 90
Drakesville	1 08	Jersey City	2 10
Dickerson's Basin	1 11	New York	2 10

From Port Richmond, Philadelphia.

Amesbury Point	1 65 — —	Middletown	1 75 — —
Albany	1 49 — —	Newberryport	2 15 — —
Boston	2 15 2 20	Neponsett	1 75 — —
" bridges	03 — —	New Orleans	4 50 — —
Beverly	2 10 — —	Nantucket	2 20 — —
Braintree	2 35 — —	New York	1 30 — —
Cambridgeport	2 40 — —	New Bedford	1 75 — —
Charlestown	2 25 — —	Newport	1 75 — —
Danversport	2 30 — —	New Haven	1 75 — —
East Cambridge	2 40 — —	Norwich	1 75 — —
" bridges	03 — —	Portland	2 25 — —
Fall River	1 75 — —	Providence	1 75 — —
Gardner	2 25 — —	Pawtucket	2 65 — —
Hartford	2 30 — —	Portsmouth	2 40 — —
Hingham	2 25 — —	Quincy Point	2 65 — —
Jersey City	1 30 — —	Salem	2 25 — —
Lynn	2 20 — —	Salisbury	2 50 — —
Lynn and dis	2 25 — —		

From Georgetown or Alexandria.

To Philadelphia	$1 50 — —	Boston	2 75 2 50
New York	2 15 — —	Sound Ports	2 25 2 50

Provincial Freights.

Currency.

Sydney to N. Y.	$2 75
Sydney to Boston	2 75
Lingan	3 50
Lingan to Boston	5 00
Cow Bay	2 75
Cow Bay to Boston	2 75
Cow Bay to Portland	2 50
Big Glace Bay	3 87
Little "	2 50

Foreign Freights.

New Castle and Ports on Tyne	£17@ keel.
Liverpool	15s @17s 6d

Rates of Transportation to Tide Water, June 1, 1867.

PHILADELPHIA & READING RAILROAD.

From Pottsville to Philadelphia	$2 17
" " Port Richmond	2 07
" " New York, drawback off	2 80

SCHUYLKILL NAVIGATION.

From Pottsville to Philadelphia	2 08
" " New York, drawback off	2 88

Wyoming Valley Canal.

	Tolls.	Freights.
From Wilkesbarre to Havre de Grace	97c.	$1 55
" " Columbia	69	1 20
" " Middletown	67	1 10
" " Harrisburg	65½	1 05

OTHER AVENUES.

From Mauch Chunk to Philadelphia, Canal, including unloading	1 88
" " Philadelphia, via North Penna Railroad	2 00
" " Elizabethport, via N. J. Central Railroad	2 03
" " Port Johnson	2 10
" " New York	2 47
" " New York via Del. Div. and Raritan Canal, including unloading	2 67
" " New York via Morris Canal	2 39
" " Hoboken via Morris & Essex Railroad	2 10
" " New York	2 29

From Elizabethport to Buffalo, via New York Canal, a distance of about 459 miles—freight, $2 62, toll 78 cents 3 40

The shipping expenses at Elizabethport and Port Johnson vary from 25 to 30 cents.

Coal Items.

The model of a complete colliery by Hiram D. Chance & Co., which was built at an expense of several thousand dollars, and after several years of labor, is about to be exhibited in this city. The exhibition, which is extremely interesting, will be illustrated by a series of lectures by Prof. Eli Bowen. This automatic colliery is indeed a wonderful work of art, and well worthy of a visit.

The cost of coal in Central Nevada is really very great. Messrs. Cox & Estes carry on a foundry and machine shop at Austin. The coals required for some portion of their business are carried from the Lehigh region to an Atlantic port, thence around Cape Horn to San Francisco, thence by river to Sacramento, thence by Central Pacific Railroad at present to Cisco, near the summit of the Sierra Nevada range, and thence are carted to Austin. Under the head of "Good News" the Austin *Reveille* lately announced that: "Conductors of mills and hoisting works, as well as all those who use machinery will be gratified to learn that the Austin Foundry received to-day a six months' supply of coal, which will enable the proprietors to execute all orders for work without any delay. Twenty tons of Lehigh coal were brought into town from Cisco in nineteen days by two fine twelve mule teams belonging to D. A. Bridges. Some idea will be formed of the great expense of carrying on an iron foundry in these mountains when we state that the freight on those twenty tons of coal amounted to nearly three thousand dollars."

The exports of coal from the United Kingdom, showed, in August, (for the first time for several months past) a certain check, having amounted to 1,026,059 tons, as compared with 1,077,309 tons in Aug. 1866, and 917,741 tons in Aug. 1865. The exports increased in August to Russia, Sweden, Holland, Italy, Brazil, and British India, but declined in every other direction. The shipments to France in August, amounted to 167,482 tons, as compared with 108,369 tons in August, 1866, and 137,167 tons in August 1865. In the eight months, ending August 31, this year, the shipments of coal from the United Kingdom, footed up to 6 715,439 tons, as compared with 6,690,249 tons in the corresponding period of 1865. The exports of coal to France to August 31, this year, were 1 395,992 tons, as compared with 1,242,493 tons in the first eight months of 1866, and 1,065,869 tons in the first eight months of 1865. The value of the coal exported in August was £528,046, as compared with £542,231 in August, 1866, and £431,769 in August, 1865; and in the eight months, ending August £31, 3,460 6:50 as compared with £3,295,655 to the corresponding date of 1866, and £2,960,42, to the corresponding date of 1865.

The value of our coal mines is a subject whose growing importance is claiming the attention of even the non-interested. The richest coal deposits are well known to exist in the valleys of the Schuylkill and Lehigh rivers. The latter basin is believed to contain thirteen distinct seams of coal, and its qualities comprise three varieties: the lower veins producing white ashes; the middle, gray or pink, and the upper, red ashes. This coal ranges north of the Schuylkill over a wide area of country, and up towards the various mountain spurs of Central Pennsylvania. The measures or seams of coal in the vicinity of the Nanticoke mountains occur in great purity and extraordinary thickness, and in some of the excavations, near Wilkesbarre, a locomotive and train of cars might be driven through the excavated avenues of these mines. At Nanticoke is a vein thirty-five feet thick; another at Wilkesbarre is twenty-eight; one at Pittston, fourteen; and one at Scranton, ten feet thick. The veins generally grow thinner towards the East, and come closer together. The Baltimore Company's mines, near Wilkesbarre, are interesting, from their having been worked so long, that about twenty-five acres have been excavated, though much of the coal has been left to support the overhanging rock. Vast masses still remain to be mined, and the expense of cutting is reduced to a minimum from the favorable circumstances under which it is situated. A look at these enormous coal veins removes all fear that the supply of anthracite coal will never fail. All these deposits lie on the Atlantic slope of the Allegan es, as do those of the Maryland Cumberland region, and large depos ts of bituminous and semi-bituminous coal, have been found in the Virginia and Ohio borders.

BOSTON STOCK MARKET.

(By Telegraph.)

Prices of mining stocks bid this day were as follows:

BOSTON, October 24, 1867.

Allouez	4½	Huron	—
Calumet	30	Isle Royal	—
Hecla	—	Minnesota	3
Canada	—	Quincy	21
Copper Falls	26¼	Cary Improvement	7
Franklin	15⅞	Rocklan d	—
Hancock	—	Boston Water Power	15⅛

Sales at Boston Stock Exchange, October 23.

625	shares	Allouez	4½	100	shares	Hancock b 60	11½
100	do	do	4¼	100	do	do	11⅝
50	do	do	4½	160	do	Cary Imp	7
250	do	Copper Falls	26½	100	do	Quincy b 30	26
100	do	do b 30	26¾				

People boast of success—even the smallest; but we learn wisdom from failure much oftener than from success. "Often," says a philosophical writer, "we discover what will do, by finding out what will not do. He who never made a mistake probably never made a discovery."

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THE AMERICAN NEWS COMPANY, 121 Nassau street, N. Y
THE NEW YORK NEWS CO., 10 Spruce street, N. Y.

☞ Correspondents, exchanges and others addressing us should be *extremely careful* to write "JOURNAL OF MINING," instead of "MINING JOURNAL," to ensure safe carriage. Communications intended for publication should be plainly written, and on one side of the paper only.

NEW YORK, SATURDAY, OCTOBER 26.

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STAMP-MILLS.

The first step towards a useful invention,—a step too often neglected,—is to know what needs to be invented. Much ingenuity and perseverance are wasted upon labors, in which even success involves no benefit to mankind. Partly of this character are the countless pulverizers and crushers, designed as substitutes for the old-fashioned stamp-mill. Some of these contrivances have merit; they are in fact adapted to certain circumstances; but the claim that they can replace the stamp-mill is not supported by experience.

There are several different principles, around which the numerous varieties of quartz-crushers are grouped. The "alligator-jaw," represented by BLAKE'S Rock-breaker, DODGE'S, GARDNER'S and other crushers; the wheel-and-pan, represented by the Chilian mill, BULLOCKS,' and other machines: the swiftly-revolving arms, as shown in HOWELL'S and STORER'S centrifugal crushers; the grindstone; the ball; and the Cornish rollers, are all examples of these typical principles. They may be still further reduced in number by reference to the modes of the application of force to the work of pulverization, namely, by squeezing, pounding or rubbing. Some of the crushers combine two of these applications in one operation, as, for instance, the BULLOCK mill, which squeezes and rubs the quartz at the same time. Now most of the inventors of new quartz crushers have been quite ignorant of the real nature of the problem to be solved, and the extent to which the solution is already attained. Some of the machines we have alluded to are already discarded on account of their mechanical imperfections. We believe we are doing no injustice to say that HOWELL'S crusher is a recognized failure, while GARDNER'S Thunderbolt, for a similar reason, is but a partial success. BLAKE'S Rock-breaker is thoroughly successful, and has been recognized as admirable for a certain purpose: that of coarsely breaking rocks for macadamizing roads, or for feeding other crushers. We do not intend to point out the merits or demerits of the different crushers, but to look at them all in a mass, as opposed to the stamp-mill. We confess frankly at the outset, that we believe the latter well-tried apparatus, taking all the circumstances into consideration, to be worth all its rivals put together, excepting, perhaps, the Cornish rollers, which we might prefer in certain cases, the discussion of which we will not enter upon in the present article. In general terms, then, the stamp-mill has the following decisive advantages:

1. It gives a direct, downward, accelerated blow. For all materials possessing high elasticity, this is the most effective method of pulverization. Grinding encounters all the resistance of hardness; but pounding avoids that contest. If one would pulverize glass, one does not rub it; one pounds it. Quartz, which is the most frequent substance crushed for metallurgical purposes, has great hardness and elasticity. It may be shivered by a blow; but it will resist a great deal of rubbing. The acceleration of gravity affords a simple method of regulating the force of the blow of the stamp, by changing the height of its drop; and the free fall of the stamp relieves the machinery from all jarring:—a point of vast importance, and one of the greatest difficulties which the inventors of direct-acting steam-stamps will have to overcome. But of these latter interesting inventions we shall speak on another occasion.

2. The repairs required by the stamp-mill are few and simple—such as the common workman can understand and execute. A part of the machinery may be repaired, while the rest is running as usual. In a large stamp-mill, there are often several stamps "hung up;" but this does not interfere with the steady running of the mill. Any apparatus which must be stopped altogether for repairs, is liable to cause considerable delays and loss.

3. The manipulations of a stamp-mill are easy and plain. It is true that much skill is required to combine stamping with amalgamation—for instance, in the treatment of auriferous quartz; but that skill is exercised with the simplest means. Many machines, which require skill to build them, keep them running, and repair them, do not admit of adjustment and relative change of their parts, and thus shut out skill entirely from its most important field. In the stamp-mill, the speed, lift, weight, size and shape of stamps, the size and arrangement of discharge, the size and inclination of copper plates and screens, the arrangement for receiving tailings, and a dozen other elements, can be presented and combined with endless variations; and this is the field for skill.

4. The material crushed receives the least possible handling, and, in the case of auriferous quartz, is carried at once through the operation of amalgamation. There can be no improvement in simplicity of the way in which crushed quartz, leaving the screens, passes over the amalgamating plates. We have seen workmen shoveling the pulp in a Bertola mill, or trying to suck it through a syphon in a Bullock mill, or blowing it up a flue with the Howell crusher, or hoisting it with elevators from Cornish rollers; but there is no machine or motive power cheaper than water, running down hill; and that is what takes the ore out of a stamp battery.

5. In the amalgamation of free gold, excessive working of the quartz "destroys" the gold. There is no greater fallacy than the notion of reducing everything to "an impalpable powder" for amalgamation. Above all, this ought not to be done by rubbing. The gold, as well as the quartz, is thus reduced; and in the condition of fine dust or scales, gathering to itself a film of air, floats away on the surface of the water. It was the advice of an experienced amalgamator: "Don't fool with your quartz, a-getting of it fine; but the sooner you bring it to the quick, after you hit it the first blow, the less gold you'll lose." Tailings may be reduced to impalpable powder and concentrated; but a sieve with forty meshes to the inch is fine enough for a first crushing. This result one can obtain with stamps more readily than with any grinding apparatus. As soon as the quartz is fine enough it passes through the screens, without being subjected to further comminution.

These are among the reasons for our preference of stamps. They have great weight with practical men; and, until we see some well-organized, systematic and successful use of the rival methods, we shall continue to believe that all our miners need is, not the invention of new crushers, but the careful construction, skilful adjustment and faithful operation of such as we have already. We published last week a drawing of a ten-stamp battery, of the latest pattern. Such machines are now crushing annually the quartz from which fifty millions of gold and silver are obtained, and in such, for the present, at least, we put our trust.

THE EARTH'S INTERIOR.

The question of the aggregate condition and temperature of the interior of our globe has always been a favorite field for geological speculation, and remains at the present day as much a matter of doubt as ever. The form of the earth, corresponding to that assumed by a liquid mass in revolution, is accepted as an evidence of its former molten condition; and the present solid crust is believed to be the result of gradual cooling by radiation into space, and to cover a fiery liquid sphere, which still constitutes the great mass of the planet. This *a priori* deduction has received some confirmation from the numerous observations of the increase of temperature with depth, after the point is passed, where the influence of the sun's rays ceases to be felt. The phenomena of volcanoes are also appealed to as proofs of intense internal temperature.

It is not always kept in mind by those who speculate upon this subject, that the questions of temperature and aggregate condition are in reality distinct. The increase of heat observed in mines, artesian wells, &c., say one degree of Fahrenheit for every fifty feet descent, would give us, at a depth of twenty-five miles, a temperature at which such rocks as basalt and porphyry would be fused. But the same depth gives us a pressure of some ten thousand atmospheres, and the effect of this immense pressure on the fusibility of rocks cannot be left out of account. Advancing to the centre of the globe, these conditions increase in vastness, and are only to be comprehended, if at all, by the highest mathematical analysis. It is certain that the common assumption of an arithmetical series of increase, unwarranted even by the nature and extent of the evidence collected, leads us to temperatures—250,000 degrees, and the like—the existence of which we have no reason to believe, and many reasons to reject, while the very expression of them in thermometrical language is meaningless and absurd. If there be a point where the mass of the earth becomes fluid, the fluidity (whether gaseous or liquid, or both) involves internal currents of temperature and an approximately uniform average heat of the whole, modified at the surface of the sphere by the nett loss by conduction through the solid crust. This loss, at the present time, is insignificant. So little of the internal heat escapes in this way that, according to the careful experiments and calculations of BEAUMONT and POISSON, if the earth were to become entirely cold, the average temperature of the surface would be only six-hundredths of a degree, Fahrenheit, lower than at present. Another difficulty of the question is found in the density of the earth, which amounts, on the surface, to about two and a half times that of water, and, through the whole mass, to a mean of about five and a half times that of water. Some writers have explained this by supposing that the heavier constituents of the earth gravitated towards the centre; but this explanation involves a misunderstanding of the real difficulty. The mean density of the earth is surprisingly low, not high. If the whole globe were composed of those materials only, and in those proportions only, which we find upon its surface, its density should be, apparently, much greater than it is. It has been calculated, for instance, that water, at the depth of 362 miles, would be as dense as quicksilver; and that the density of marble at the centre of the earth, would be 119 times greater than at the surface. Other writers, comprehending this dilemma, suggest that the central portions may consist of matter as attenuated as the lightest known gases, or even as subtle as light itself; but this hypothesis is evidently an attempt to escape the consequences of immense pressure by begging the question entirely, which is: whether matter can exist under the circumstances assumed, in any other than the most condensed condition. The true reply seems to be, that we have no knowledge of the behavior of substances at such enormous pressures, and that what we do know of the effects of pressure indicates that the compressibility of solids has its limits. In addition to this, it may be said, that the calculation of increasing pressure, towards the centre, by the ordinary rules of weight, is almost as absurd as the calculation of temperature by the rule of arithmetical increase. A great portion of the weight of the earth's crust may be borne by the arch of the crust itself; and the immense pressure of gravity resolves itself partly into tension of the rocks.

T. STERRY HUNT, in his recent lecture on the *Chemistry of the Primeval Earth*, disposes of the theory of a liquid terrestrial centre, with a single argument, which he seems to find conclusive. He says:

"It is generally assumed that in the cooling of a liquid globe of mineral water, congelation would commence at the surface, as in the case of water; but water offers an exception to most other liquids, inasmuch as it is denser in the liquid than in the solid form. Hence ice floats on water, and freezing water becomes covered with a layer of ice, which protects the liquid below. With most other matters, and notably with the various mineral and earthy compounds analagous to those which may be supposed to have formed the fiery-fluid earth, numerous and careful experiments show that the products of solidification are much denser than the liquid mass; so that solidification would have commenced at the centre, whose temperature would thus be the congealing point of these liquid compounds."

We do not find this very satisfactory; but without entering upon the argument at present, it will be sufficient to ask how Mr. HUNT explains the cooling of a cast cannon-ball from the outside, the cooling of a lava-stream on the surface, and the congelation of fused basalt and other rocks, in a similar manner, as shown by the experiments of BISCHOFF.

Without pretending to cover the whole field, or to indicate even the many aspects of a topic so intimately connected with the geological controversies of the last and the present century, we have thus attempted to point out the difficulties which environ every hypothesis hitherto advanced, and the incompleteness of our sum total of knowledge upon this most fascinating subject. As for our own opinion, fish it out who can!

OF INTEREST TO MINING COMPANIES.

At a recent session of the district court in Elphin County, Colorado, suit was brought against an eastern mining company for the repayment of certain moneys advanced. The papers were served on the resident superintendent. At the trial, the superintendent and clerk were the only witnesses; and, upon their testimony, a verdict was taken for the plaintiff for the full amount claimed, nearly forty-seven thousand dollars, there being no defence. The action was commenced just in time for the term, and carried through to a verdict exactly two weeks from the time of service, giving the Company (the headquarters of which, we believe, are in Boston,) no opportunity to receive information and employ counsel. We know nothing of the merits of this case, but it was evidently a very hurried and one-sided affair. The fact that the representative of the defendants appeared as the main witness for the plaintiff, is not the least significant feature of it. Had the interests of the Company been properly protected, the case would at least have been put over until the next (April) term, when there would have been ample opportunity to interpose a defence, if any were possible. Such occurrences are too common in the mining States and Territories of the West, and illustrate the strange fatuity with which business is transacted by large associations of otherwise intelligent business men. A

moderate sum of money would retain a respectable attorney, who could attend to any such suits, suddenly sprung upon a Company, and put them off until he could transmit particular information to his clients, and receive their detailed instructions. Our mining companies seem to be shining examples of the penny-wise-pound-foolish. They have money enough to waste, but none to use. Heavy salaries to incompetent officers, large bonuses to speculative brokers, immense prices for undeveloped and worthless mines, are within their legitimate outlays; but such expensive things as thorough mining engineers, efficient business agents, upright and faithful lawyers, they cannot afford to maintain. Well, they get their dividends, "with costs." We hope they are suited.

GAS-FLAME REACTIONS.

Anxious to increase, in every possible way, the scientific value, as well as the popular interest, of the AMERICAN JOURNAL OF MINING, we have admitted from time to time among our original papers, translations of important foreign works, to which the American reader would with difficulty find access. We begin this week the publication of one of the most interesting original and valuable contributions made to modern science—the recent work of Prof BUNSEN, of Heidelberg University, on the reaction of the non-luminous gas-flame. The same thoroughness and practical sense, combined with brilliant genius, which characterized the work of BUNSEN and KIRCHHOFF on the Spectroscope, appear in this treatise. Everything that BUNSEN does is so complete and satisfactory, as to be a model for the investigator and a pleasure to the critic. The present paper, containing the description of a method of qualitative analysis, more convenient, accurate and comprehensive than that of the blow-pipe, will be welcomed in every laboratory. We are indebted for its translation to DR. ENDEMANN, of the Columbia Laboratory; and, that nothing may be wanting to its perfection, we reproduce the original illustrations with which BUNSEN adorned the text.

RESOURCES OF MEXICO.

We publish this week the first of a series of articles, giving an account of the natural resources and condition of the state of Vera Cruz, written by a gentleman of ability and character, residing in the city of Jalapa. As, in our opinion, the time has arrived when the wealth of Mexico deserves, and will receive, the attention of thoughtful and enterprising men, we intend to lay before our readers, from time to time, trustworthy information as to its nature and extent. In another column will be found the announcement of Messrs. LUELMS and ST. CHARLES, who will be happy to see persons interested in this subject, and give them further information, at Room 17, 90 Broadway.

MISSOURI TIN AGAIN.

The St. Louis *Journal of Commerce* calls attention to the production of a pig of pure tin, weighing seventeen and a half pounds, from the ores of Missouri. A second bar of five lbs., was made at the same time, the experiment, we believe, being conducted in the city of St. Louis. The yield is said to have been eight per cent. of the crude ore.

Whatever we may have thought of the premature and exaggerated exultation of the speculators in Missouri tin mines, we shall greet with pleasure any substantial results from actual developments. We would not discourage earnest experimenters; and we hope their anticipations of eight per cent. ore will be satisfied. Meanwhile, they would do well to send some of that sort to New York; as the "specimens" shown here to assist the sale of mineral lands are very poor in quality—so poor that several prominent chemists have failed to get any tin out of them. The paper alluded to describes the experiments as "made under the direction of Dr. T. R. Goulding, to decide upon the proper flux, and the best manner to roast and smelt the ore." If the ore is the oxyd of tin, as has been reported, it will need no roasting; and it will be better to experiment a little on the best way of concentrating it before smelting. It will not do to smelt eight per cent. ore; our Missouri friends may be sure of that. Concentration must be their road to success, if they expect to reach that goal.

THE FAIR—CONCLUDED.

The Fair of the American Institute draws to an end, and ere this reaches our readers, it will have closed its doors. That it has been one of the most successful exhibitions ever held under the auspices of the institution, no one can question. To Prof. TILLMAN and his able board of managers, who have been in constant attendance, anticipating every want of their patrons, the praise is mainly due. As regards ourselves, we have passed many pleasant hours during its continuance, in examining its curiosities and inventions, and cannot but feel that the time has been too short to make a thorough and minute examination. From week to week we have chronicled the progress of matters and events transpiring there, and this week make our final report. Several new and valuable inventions have been introduced since our last visit, which, together with some few previously overlooked, now claim our parting attention.

Messrs. Symmes & Hayes have a new safety boiler which is attracting much deserved notice. Its merit, as a water circulator, in particular, elicits very favorable comment. The New York Steam Engine works have also made some valuable additions to their admirable display, consisting of some of the finest mechanical tools we have ever seen. Cope & Maxwell, Cincinnati, exhibit a Steam Pump, which, for mining purposes, compares favorably with its excellent competitors. N. C. Stiles, of West Merideon, Conn., creates a noisy sensation with his improved Drop Hammer; while Charles Merrill & Sons exhibit a neighboring hammer, close by, which lays claim to a large share of our attention. Messrs. Walters & Leonard, the enterprising manufacturing agents of this city, make an interesting display, the merits of which, judging from their numberless placards, they are solicitous should not be unheeded. Hall & Gifford exhibit a very serviceable "Patent Nippers" tool for machinists and gas fitters, which, by a peculiar arrangement, has a double leverage, and answers its purpose admirably. Circular Saws, with movable teeth, are meeting with much demand. The American Saw company, Miller & Co; and Hoe & Co., are the contestants for the victor's laurels. Richard Dudgeon has a praiseworthy Drop Hammer. Lucius W. Pond displays some superior iron and wood working machinery. Messrs. J. A. Fay & Co., of Cincinnati, Ohio, exhibit several curious and valuable inventions in wood-working machinery. Milo, Peck & Co., exhibit a machine for directing newspapers. As we have engaged one of them for our office, our readers will soon have ocular proof of its capabilities. A. P. & M. Stephens, of this city, have an excellent vice which recommends itself for its labor saving qualities. M. Botticher, of Newark, has a patent adjustable Pressure and Vacuum Gauge, which is just the article desired by all boiler makers. John Bachelder, of Norwich, Conn., has a first class Self Lubricator, for steam engine, pump, etc., while Richard Martin, of Brooklyn, has some of the best metallic steam Packing that has come under our observation.

It would make too long a story for our limited space, were we to attempt to even enumerate the interesting and new articles in the mechanical line, that are contained in the Fair. Whoever has missed the rare treat afforded by a visit, should at least be there to-night, to hear the closing address of HENRY WARD BEECHER.

THE ALLEGED NEWTON-PASCAL FORGERIES.

The controversy on this subject rages with additional intensity. M. CHARLES does not give up his faith in the authenticity of the documents in his hands; and the charges of forgery, based on the supposed differences of handwriting, are not fully substantiated. More effective as a contradiction, in the present stage of the dispute, is the discovery that several of the alleged letters of NEWTON are *verbatim* copies of extracts from English letters written by him, and since translated from the French, while one document turns out to be a copy of an extract from a letter of Dr. SAMUEL CLARKE to Leibnitz, published in 1717. It is evident that both sides in the present controversy cannot be in the right; and perhaps the final result will be mutual concession. Still, it cannot be denied that the discovery of one clear forgery among the many papers presented by M. CHASLES, will go far to invalidate all his evidence. Meanwhile, no one accuses the distinguished author of the *Apercu Historique* of conscious complicity in such a fraud.

NEW PUBLICATIONS.

LA NEVADA ORIENTALE. *Geographie, Ressources, Climat et Etat Social. Rapport, addressé au Comite Local pour l'Exposition de Paris, par* MYRON ANGEL. This little pamphlet, written for the Committee for Eastern Nevada at the World's Fair, by the editor of the *Reese River Reveille*, has been translated into French, and published for private circulation, with the French and English versions on opposite pages. The original account is pleasantly written; and as impartially, perhaps, as was consistent with the task set MR. ANGEL by the Committee—that of steady but not monotonous, and universal, but discriminating eulogy. The ingenious way in which the vocabulary of praise is applied, on the principle of permutations and combinations, to characterize the numerous "mining districts" of Eastern Nevada, merits the admiration of the connoisseur in style, whatever the rigid moralist may say of it. One locality has "vast beds of very rich ore;" another is seamed with "countless veins of richest mineral;" a third "will astonish the world with the beauty, quality and worth" of its "rare and valuable ores;" another rejoices in argentiferous galena "rich in silver and abundant in quantity;" in another, "careful engineers" have placed the value of a single vein at twelve millions of dollars (which careful capitalists, we presume, are ready to pay); while those localities which are entirely undeveloped or have been abandoned in despair, are kindly said to be highly esteemed by those who are acquainted with their resources, and only waiting for the Pacific Railroad, to display their treasures to a startled universe. In spite of this elaborate strain of eulogy, the account is highly interesting, and to a certain extent impartial—that is to say, if we strike out the general superlatives which are distributed as one scatters compliments in society, there remain numerous important facts, and above all, the great fact, that in spite of much discouragement, and many natural obstacles, the pioneers of Nevada have gone steadily forward, opening new districts to settlement, advancing the outposts of civilization, spending their lives bravely and their money freely, (other people's money, perhaps, more freely,) and, at whatever cost, laying the foundation of a rich and prosperous State. The development of Eastern Nevada has been called premature. So is all pioneer-work premature. If the mining districts of the Pacific had waited for the Pacific Railroad, it would not have been built; for the persistent agitation of the subject by the miners of Colorado, Nevada and California, has been far more efficient as a stimulus to its completion than the wise forethought of statesmen or the calculations of economists. It is easy to laugh at the extravagances of the Western men—those Gascons of the New World; but they, like the Gascons, have some reason to boast; and if they do not make their promises good, their partial fulfilment involves great achievements. They talk like the gods; but they perform at least like heroes.

The French translator of MR. ANGEL'S report has had hard work to keep up with the stunning pace of the original, but he has done his work with zeal, and, with the aid of a paraphrase now and then, he has produced a brilliant picture of more than Oriental splendor. Proper names puzzle him somewhat; and now and then he alters them a little to suit his classical taste, as, for instance, where Lander Hill appears as Leander Hill. The report of mines from Lander county figures as a report from Lander's committee; but these are trivial matters, and may be forgiven a poor Frenchman, dazzled and bewildered with the District de Big Creek, District de Milk Springe, District de Peavine, and the like. He may thank his stars that he was not called upon to translate or transcribe such proper names of You Bet, Hard Up, Hell's Hollow, and Shirt-tail Bend. The dictionary of the French Academy is not equal to such a task.

THE PROCEEDINGS OF THE ESSEX INSTITUTE for 1866, are especially valuable to scientific men, by reason of the admirable Naturalist's Directory which they contain, and which, we hope, will find sufficient favor to warrant its continuance and correction from year to year. Wm. Wood & Co., 61 Walker street, or Westerman, 440 Broadway, can supply them.

CATALOGUE OF VASSAR COLLEGE.—This noble institution is rapidly making its mark among the colleges in our land. It is customary to speak of establishments for the education of women with a certain chivalry of criticism, as though they were not to be subjected to those severer tests applied to schools for young men. VASSAR seems to need no such charity of judgment; but in the talent she employs, the work she does, and the prosperity she achieved, challenges, without fear, all reasonable comparisons or criticisms. We can bear witness, from our own observation, to the success with which, in this unique institution, the freedom and enthusiasm of the college are united with the training, system, and discipline of the school. The great college is a world by itself; and he who would study its workings should do so within its walls. We can only allude here to the manifest importance attached, in the VASSAR curriculum, to scientific branches of study. Without ignoring the claims of classical and liberal education, much attention is paid to geology, chemistry, zoology, botany, physical geography and astronomy. It is only necessary to name Professors FARRAR, TENNEY and MARIA MITCHELL, to prove that these departments of science are in the hands of competent instructors, of more than local fame. The VASSAR observatory, mineral and zoological collections are already known to *connoisseurs*. The latest addition was that of the splendid private collection of North-American birds, presented by J. P. GIRAUD, JR., Esq., the associate of AUDUBON.

DIVIDENDS.

Cambria Iron Co., at 400 Chestnut street, Philadelphia, 6 per cent., free of State tax, due Nov. 1 to stockholders of record Oct. 23; Consolidated Petroleum Co. at 19 Broad street, 2 per cent. on demand; Clarion and Allegany River Oil Co., at Philadelphia, 5 per cent. on demand; Eureka Lake and Yuba Canal Co., at 34 New street, $2 50 gold per share; Roaring Brook Coal Co., at 17 State street, Boston, quarterly 2½ per cent. ($1 per share) due Oct. 25th to stockholders of record Oct. 19th; Mount Pleasant Coal Co., at 17 State street, Boston, quarterly, 2½ per cent. ($1 per share) free of State tax, due Oct. 24th to stockholders of record Oct. 19

MEETINGS.

Salem Coal Co. at 11 Merchant's Exchange, Philadelphia, election of directors Nov. 4th, 3 P.M.; Ashbury Iron Mining Co. at 55 Cedar street New York, Nov 1st; Silver Glace Mining Co. at 101 Maiden Lane, Nov. 4th; Shaffer Farm Oil Co. at 155 Broadway, Nov. 24; Rathbone Petroleum Co. of West Virginia, at 54 William street, Nov. 12th; New York Mining Co. at 125 Front street, N. Y., Nov. 4th, between 12 and 1 o'clock; Rutland Marble Co. at 48 Exchange Place, N. Y., Nov. 5th, 1 P. M.

ASSESSMENTS.

Allouez Mining Co. at 40 State street, room 20, Boston, $2 per share, payable Oct. 29th by stockholders of record the 21st inst., interest after; Bay State Mining Co. at 23 City Exchange, Boston, $2 per share, due with interest after Oct. 24 by stockholders of record Oct. 21; Hecla Mining Co. at 114 State street, Boston, $5 per share, payable with interest after Nov. 21 by stockholders of record Oct. 21; Ophir Silver Mining Co. (of Nevada) $3 per share, payable Oct. 1, in gold, at San Francisco office.

STATEMENTS.

OGIMA MINING CO. (of Lake Superior.)—The Directors' report of last year's operations is as follows: Capital paid in, $207,800; real estate, 37,600; personal estate, $60,000; debts, $6,013 52; credits, $11,610 07; amount of copper raised, tons, 84, 78,200.

HURON MINING CO.—We last week published some facts relative to this company, but as the name of the company was unfortunately omitted by the printer, the reader must have been sorely puzzled as to what company the remarks applied. We notice in the Houghton *Gazette* a report of a meeting of the creditors of the company, residing at Portage Lake, to consult upon a plan of settlement of their claims. It is probable that the affairs of the company will be so adjusted as to allow mining operations to be resumed at an early day.

Scientific Meetings.

POLYTECHNIC BRANCH OF THE AMERICAN INSTITUTE.

IMPROVED STOVES FOR ALL KINDS OF FUEL—PETROLEUM AS FUEL FOR ENGINES—STEAM PLOWS—FIBROUS GROWTH FROM NICARAGUA,

The regular weekly meeting of the Polytechnic Branch of the American Institute was held last Thursday evening, Prof. Tillman in the chair. The attendance was better than usual.

Prof. Tillman read an account of the late trial on the Battery of the new electric light, but gave it as his opinion that it was overwrought. Though a very beautiful light, it was hardly capable of the wonderful effects ascribed to it.

Mr. Calvin Pepper explained his method of combustion, the two fundamental principles of which are: First, there can be no perfect combustion of fuel when the air supporting the combustion passes all one way through the fuel, and is not supported by currents of pure air in an opposite direction in the body of the fuel. Second, the pure air in the body of the fuel must come to the fire in minutely divided streams, not exceeding the sixteenth part of an inch in diameter, and in quantity just sufficient to afford complete combustion without excess or deficiency. The speaker illustrated these principles in his cooking and parlor stoves. In the cooking stove the air is fed to the fire through a minutely perforated metal, covering the entire upper surface of the fire. The lower draft can be cut off with safety and advantage, the fire burning from above downwards. The fire radiates directly into the room through the perforated metal, giving full view of the fire from the room, while the products of combustion escape through the flue and smoke-pipe below the perforated metal. It is claimed that cooking can be done in a superior manner directly over the fire from radiant heat alone, with perfect combustion of the fuel beneath, and without any escape of gases or smoke. The flame and heated products of combustion, in escaping from the combustion chamber through the flue opening into the perforated diaphragm, pass beneath the kettles, etc., placed

outside the combustion chamber, and into and around the baker of the oven. It is further claimed that all kinds of culinary operations can be done as in the ordinary stove, and also that the cooking can be accomplished by pure radiant heat alone with great saving of fuel. Beneath the fire-grate is another minutely perforated diaphragm, passing the air up through the fire in minutely divided streams, to meet the similarly divided streams of descending air, which have the effect of hastening the combustion of the fuel when a sharp and quick fire is required. The parlor stove is on the same principle. Both stoves will burn any kind of fuel, whether hard or soft coal, coal-dust, wood, sawdust, peat, coal-gas, or petroleum oils. A statement made by the gentleman that he could broil a beefsteak perfectly in five minutes with the radiant heat from one of his stoves was received with some discredit, but the speaker promptly offered to test the fact by actual experiment.

Mr. Pepper detailed at considerable length his method of burning petroleum in engines, all the features of which we have already given. The merits of sand as a reservoir for the oil were urged with much earnestness. The specific gravity of water introduced into the sand kept the oil on the top. The water was decomposed into its elements of oxygen and hydrogen, and the oxygen made to supply combustion. He therefore claimed, that, despite all seeming contradiction, he succeeded in burning water, which announcement proved too much for the composure of his audience. He exhibited a model of his patent, offering to make the experiment and prove all his assertions, but was only prevented from carrying out this intention by the want of time, which Prof. Tillman regretted rendered the further discussion of the many questions involved impossible.

The regular subject of the evening was then announced, but owing to the unexpected absence of the representatives of the various engines, the consideration of the matter was laid on the table.

Mr. Blanchard described the steam plow, consisting of a portable locomotive engine. The plows were double, and made to work both ways. The idea was pronounced, and conceded, to be old, and by some of the members thought to be altogether impracticable, as steam plowing could never be made to pay.

Mr. Reid illustrated his idea of preventing the packing of the earth, which was said to be an unavoidable effect of the steam plow.

Mr. Nash thought steam plowing altogether too difficult, as the plow could never be made to overcome obstructions of stones or hard soil, which, with the present plows, can be easily avoided. This seemed to be the general opinion of the members.

On motion of Dr. Parmerlee, it was agreed that a committee of five be appointed by the President, during the coming week, for the purpose of devising the best method for testing the power and efficiency of boilers and steam engines.

Mr. Hoffman exhibited some fibrous growth from Nicaragua. It is light-colored and quite strong. The natives use it for making rope. It was stated that it could be collected at the rate of forty cents per day for each laborer. Its examination brought forth highly favorable comment from the members.

The meeting then adjourned until next Thursday evening, when the novelties at the Fair will be the matter of consideration.

Scotch Pig Iron.

There is scarcely any article amongst the numerous and varied productions of this country which has at any time possessed such absolute and universally acknowledged sway over all the markets of the world as that which the foundry iron made in Scotland has held for a long time past, and holds at this present moment. In no country of Europe, and no, probably, manufacturing district in the world, are the celebrated works of Scotch pigs unknown, or entirely out of employment, and the highest protective tariffs ever laid on by different Governments have been unable to prevent the importation of this material for the use of the foundries of their respective countries. The qualities which make the iron so especially suitable for foundry purposes are a low melting-point, a remarkable uniformity of grain, and a great cohesive power; but the circumstance to which the universal use of this material is principally due is the low price at which it is produced, or, to speak more precisely, to the advantages combined by nature in the small district of Scotland to which this iron-manufacture is confined. The iron-making district of Scotland extends from the Firth of Forth, a short distance east of Edinburgh, to the opposite point of the west coast, or the Firth of Clyde, and to a distance south, so that its shape on the map is somewhat that of the letter L. The track is identical in position with the coal-beds of Scotland, the coal and iron ore of that district being found in the same mines in alternating strata at different depths. The thickness of these coal-measures is about 1,500 yards. They consist of two distinct groups, called the upper and lower coal-measures, the two groups being divided by a stratum of limestone, varying between 50 and 150 feet in thickness in the different localities. The upper coals, which lie at a depth not exceeding 330 fathoms, form several basins of which the largest is the Clyde, southeast of Glasgow. The lower coals occupy a larger area than that in which the upper coals occur—so that there are many mines placed upon and working these lower measures without having passed through any upper strata in their particular locality. Instances of this kind are the mines in the north of Ayrshire, supplying the Glengarnock and Blair Ironworks, and the mines at Muir Kirk, Kilburnie, and of Conoglen, in Renfrewshire. The upper coals have formed the original supply of the great ironworks in the Glasgow coal bed, and particularly of that dense group of blast furnaces surrounding Airdrie, amongst which the Gartsherrie works and Calder iron works are among the most celebrated. The ironstone first worked in Scotland was the clayband ore, containing from thirty to forty per cent. of iron, and occurring in seams or bands, or in nodules, throughout the whole of these measures. The clayband ore requires calcination before being smelted, which process may be carried on in kilns or in open heaps, coal slack being used as fuel. In the year 1805, the blackband was discovered by David Mushet. This ore contains from fifty to seventy per cent. of iron in combination with a sufficient quantity of carbon for its being calcined without any further admixture of coal. The product of this calcination is a coke-like, heavy material, which is charged into the blast furnace with an admixture of lime and some other flux, and, in the generality of cases, the raw bituminous coal as the only fuel. The yield of the blackband ore is so far superior to that of clayband, that this latter material has been almost entirely superseded by the blackband, and it is used only in mixtures with poorer blackbands, which, from a surplus of coal they contain, could not be calcined to advantage by themselves. The best kind of blackband ironstone contain from two to eight per cent. of coal, this percentage being mechanically mixed with the ore, and over and above the carbon contained in the blackband ore itself; there are, however, seams of blackband which carry as much as twenty-five per cent. of free coal, and these cannot be used otherwise than mixed with other ores, which economically consume the surplus of coal in the process of their calcination. The blackband first discovered in Scotland by Mushet was that of the mines near Airdrie, and the consequence of this circumstance was the clustering round this locality of all the blast furnaces which were erected up to 1840. After that the blackbands of the lower coal measures became more generally known, and ironworks such as Blair and Muirkirk ironworks were started, drawing their supply from these layers exclusively. The average blast furnace charge for smelting blackband iron are:

	cwt.
Calcined blackband	34
Limestone and dross	25
Coal	50

per ton of foundry pig iron made. The furnaces in this district smelt about 200 tons of iron per week each; they are all open-topped, and almost all hot-blast furnaces.—*Engineering.*

The Future of the English Copper Trade.

We are quite aware that we convey but little, if any, information to the great majority of readers when we state that at least three-fourths of the copper ore of the United Kingdom is smelted in the district of Swansea, and that up to the past year or two that port has enjoyed consequently almost a monopoly in the importation of copper ore, regulus, &c. Upon the banks of the river Tawe gigantic smelting works have been erected, employing thousands of hands, and paying almost fabulous amounts in the shape of wages, &c.—the works of Messrs. Vivian & Son, Grenfell, & Co., Foster, Williams & Co., and others, being by far the most extensive in the kingdom; so far as Swansea is concerned, therefore, it may be said that the prosperity of the port and town mainly depends upon the copper works, and the inhabitants, therefore, quietly submit to the deleterious effects of the smoke consequent upon the substantial *quid pro quo* they receive in the shape of the thousands of pounds annually expended amongst them by the workmen employed at the various works. For the past six or nine months there has been a most marked and sensible diminution in the imports of copper ore, and the future of the copper trade is regarded with most vital interest by the tradesmen of the town and the inhabitants of the district generally. The statistical returns of the trade of the port for the past eight months of the present year, as compared with the corresponding period of last year, have just been published (under the authority of the Swansea Harbor Trustees,) and these show a decrease in shipping rates, against the eight months of the present year, of upwards of £2,000, a very large proportion of which is attributable to the falling off in the importation of Chilian and other foreign ores. Mr. H. H. Vivian, M. P., certainly one of the best authorities of the day, in alluding to the subject at the late Harbor meeting, said his opinion was "that the trade of the port was unquestionably undergoing a great and important change, and they could not expect large imports of copper ore as formerly." These are ominous words for Swansea, and although Mr. Vivian "had no doubt that the trade of the port would right itself, and that other trades would spring up in the port to counterbalance the decrease of the copper ore trade," still the opinion of such an authority as Mr. Hussey Vivian is entitled to great weight. The fair inference to be drawn from the remarks of Mr. Vivian is that the smelting of copper ores is being gradually supplanted by other countries, chiefly by Chili and other South American States. It is well-known that large smelting works have within the past two or three years been erected in the immediate vicinity of the ore deposits; that many skilled artisans have within the same period emigrated to the Chilian States, and that the process of smelting is now being carried on with a vigor and determination essential to success. The one great drawback to the Chilian works is the scarcity of coal, every ton costing there something like 40s.: and the problem to be solved, therefore, is essentially one of pounds, shillings and pence—that is, whether it is cheaper to export coals to Chili to smelt the ores, or import the ores for smelting in the midst of the coal basin of South Wales. Intelligence has lately been received to the effect that coal has been discovered in the vicinity of the copper ore deposits, which, although of an inferior quality, and of different color, to that of South Wales steam coal, answers for smelting purposes (when slightly mixed with Welsh coal) very well. If such is the case, the future of the English copper trade is a question which must be regarded with considerable interest, and not a little anxiety, by the trade and the country generally, for hitherto our copper trade has been justly regarded as one of our staple trades. Probably the late war which has been raging along the South American coast has done much to bring about the state of things to which we have alluded, but whatever the cause, the effect remains the same, and as such it behooves all interested in the question to look matters straight in the face, and be prepared to meet any exigencies which might arise. In the meantime, as if to give practical effect to his opinion, it is rumored that Mr. Vivian is about converting a large iron ore works, which have long since laid idle, into a tin-plate works, which will give employment to nearly 1,000 hands.—*London Mining Journal.*

Patent Claims.

Interesting to Miners, Millmen, Metallurgists, Oil-Men, and Others.

The following claims have recently been issued from the United States Patent Office:

69,783.—Alloy for Journal-boxes, etc.—G. W. Dismann, Chesterville, Ohio:

I claim a composition for journal boxes, bearings, and other mechanical purposes, composed of copper, glass, borax, prussiate of potash, and tin, as herein described and for the purposes specified.

67,784.—Apparatus for Separating Gold, etc.—William T. Duvall, Georgetown, D. C.:

1st, The series of chambers or traps, e, so constructed and arranged that greater freedom of egress is afforded in each successive chamber, whereby the velocity of the current is reduced, and the heavier particles are deposited successively therein, according to their specific gravity, substantially as and for the purposes set forth.

2d, In combination with said series of chambers, e, I claim a centrifugal or other suitable pump to force the current and at the same time to agitate the earthy liquid, substantially as and for the purposes specified.

3d, The arrangement of the pump at the top of said series of chambers, so as to operate the apparatus by producing a vaccum therein, essentially as and for the purposes described.

4th, The arrangement and combination of the pump and the series of chambers, e, as shown in Fig. 8, with the straight suction-pipe, J, essentially as and for the purposes set forth.

5th, In combination with said series of chambers, e, I claim the pipe, D, for operating by a column or head of water, substantially as described.

6th, The chambers, e, constructed in separate parts, as represented, the nozzle of each protruding into the chamber of the next, forming annular receptacles, substantially as and for the purposes specified.

69,790.—Furnace for Steam Boilers, etc.—Henry R. Foote, Oil City, Pa.:

I claim, 1st, The combination with a furnace of the retort, A, constructed substantially as described, when arranged to be used in connection therewith, for the purposes set forth.

2d, The combination and arrangement, substantially as described, of the retort, A, within a furnace, and connected to the boiler by the pipe, F, and with the reservoir, H, as described.

3d, The admixture of air by means of an air pump, or its equivalent, with the gases obtained from the decomposition of steam by means of the heated carbon in the retort, before ignition, when used in combination with an ordinary furnace, substantially as described.

4th, The admixture of the vapor of hydro-carbon in the manner described, with the gases obtained from the decomposition of water or steam, in the manner described, for the purpose of generating heat in connection with the furnace of steam boilers, substantially as herein described.

69,811.—Packing for Joints, Valves, etc.—Nathaniel Jenkins, Boston, Mass.:

I claim, 1st, The employment of pulverized mica, intimately mixed before vulcanizing with the constituents of vulcanized rubber, as and for the purpose described.

2d, The employment of pulverized wood-charcoal, intimately mixed before vulcanizing with the constituents of vulcanized rubber, as and for the purpose described.

69,904.—Mode of Coating Wrought-iron with Cast-steel.—Josiah W. Elis, Pittsburg, Pa.;

I claim, as a new and merchantable article of manufacture, slabs, sheets, plates, bars, and rods of wrought-iron, having a uniform coating face or surface of cast-steel applied, as hereinbefore set forth, on any one or more or all sides of the same and of any required degree or thickness.

69,906.—Tuyere.—Frederick Fisher, Gloucester, Mass.:

I claim the water-tight vessel or reservoir, I. J, surrounding or partially in closing the main air-tube, H, and the tubes, K, K, in combination with the pipes, F and G, and the reservoir, E, substantially as and for the purpose specified.

Special Scientific Brevities.

☞ Some very elegant and simple methods of exhibiting the phenomena of diffusion are given by Herr Merz, in a recent number of the *Journal fur Praktische Chemie*. A portion of the shell of an egg having been removed by the action of hydrochloric acid, leaving the membrane exposed, the egg is to be suspended in water from the arm of a balance, a counterpoise being placed in the opposite scale. In about half an hour the weight of the egg has sensibly increased, as the position of the balance-beam will show, in consequence of the passage of water through the membrane. If, now, alcohol be substituted for the water, and the weights readjusted so as to bring the beam horizontal, it will soon commence to move in the opposite direction, showing that the egg has become lighter by the diffusion of water into the alcohol. The diffusion of vapor may be exhibited by tying a diaphragm of india-rubber—a portion of a small toy balloon will answer the purpose—over the mouth of a funnel, the other end being in communication, by means of an elastic tube, with a vessel of water. The funnel being inverted over a dish containing ether, which, however, the diaphragm is not to touch, the vapor of this fluid will pass rapidly into the funnel, the air being observed to escape in bubbles in the water at the small end. Remove now the vessel of ether, and the operation will be reversed, the vapor passing through the diaphragm into the atmosphere. In order to fill the vacuum thus created the water will rise in the tube, the lower part of which should be of glass to render this apparent, and the diaphragm will be curved inwards. These experiments strike us as being particularly instructive, and they are within reach of every one. The balance may, it is hardly necessary to say, be extemporized by means of a light bar of wood.

☞ S. Meunier describes, in the Paris *Cosmos*, a plan for preserving a representation of the curious figures produced when iron filings are scattered upon a sheet of paper placed over a magnet. He saturates the paper to be used with a warm solution of ferro-cyanide of potassium, and then dries it. For iron filings he substitutes magnetite or loadstone, which is placed upon the paper and submitted to the action of a magnet. After a beautiful combination of the curves, called the magnetic phantom, have been made, pure hydraulic acid gas is brought in contact with the paper and figures, and, after a few seconds, removed. The paper, being then freed from the loadstone powder, is washed very thoroughly: when a dark blue figure will show, with great delicacy of detail, the positions assumed by the pulverized ore under the influence of the magnet. The method is said to be more convenient and exact than the plan of covering the paper with a mixture of gelatine and starch, or paraffine and wax.

☞ Bottger has recently published some account of the so-called mastic cements used sometimes by architects and builders. He states that they are mixtures of sand, limestone and litharge, with linseed oil. Various proportions may be employed according to the hardness required, but in general one hundred parts of the dry materials may be used with seven parts of oil, and it is best, it is said, to employ drying oil. These ingredients are carefully mixed and well worked together. The mixture will have the consistence of moist sand, and at first will have but little coherence. But when pressed together it gradually solidifies and hardens, so that in a little time it acquires the hardness of ordinary sandstone; and in six months it will strike sparks with steel. The binding agents in such cements will be the litharge and oil, the sand giving body, and limestone or chalk, according to Bottger, only filling up the interstices.

☞ Pending the adoption of an uniform system of weights, M. Seguier has suggested the adoption of a uniformity of form. A cylinder, the height of which is half the diameter, he thinks will be found the most convenient form. Weights of such a shape up to half a hundred weight can be easily carried or rolled about, and piled on one another, while the eye will easily recognize the differences of size. The larger weights, it is suggested, should be of cast iron, with a hemispherical depression at one end, through which is carried a round bar for the hand to grasp. A groove on the upper surface can be filled with lead for the adjustment of the weight. The smaller weights may be of copper.

☞ The late M. Evan Hopkins has proposed a new plan for remedying the deviation of the compass needle in iron ships, his object being first to neutralize or destroy the polarity acquired by the iron ship while building, and removing the compass from the sphere of attraction exercised by the iron of the vessel. A horseshoe magnet is to effect the first object, and elevating the compass to a sufficient height is to accomplish the other. He proposed to place a reflector near the elevated compass, in such a way that the card may appear like the face of a clock, and be capable of being read at the distance of twenty feet from the helm.

☞ M. Stoss, a German engineer, states that oxide of chromium is the best substance for polishing steel. The article is readily procured, as it is used for painting on porcelain, but it can easily be prepared by igniting bichromate of potash to redness. One equivalent of chromic acid is reduced to oxide of chromium, and on well washing the residue of the ignition, neutral chromate of potash is washed away and the oxide left behind.

☞ Copper deposited by galvanic action is rendered tough, according to M. Bouillet, if a mere trace of gelatine be added to the solution of sulphurate used in its preparation.

On-dit about Minerals, &c.

☞ A new San Francisco Directory says that during the year ending June 30, 1867, there were erected 1,050 buildings, of which 340 were brick. For the same period the cost of improvements is estimated at $9,000,000. The entire cost of street work, for the same period, was $5,459,287, and there were built nearly 50 miles of sewers. The statistics of real estate improvements show a value for the year ending June 30, of $8,000,000. For the year ending July 31, there were sold $16,600,000 worth of real estate. Among other manufactories, there are three of acids and other chemicals in the city, which supply the assay offices and mint on this coast. At the present time there are fourteen large foundries and machine shops. During the year 1866 these foundries, with some few smaller ones, employed 1,078 men, using 6,921 tons pig iron, 1,448 tons bar and rod iron, 1,027 tons sheet and boiler iron, 110 tons rivets. Several of these establishments have extensive boiler shops connected with them. The lead and salt works of Messrs. T. H. Selby & Co. produced 1,000 tons of lead and 200 tons shot. The metal is mostly imported from Spain, and these works supply half the consumption of the coast.

☞ The tin mines in Cornwall have been worked for 3,000 years, They are now yielding 3,500 tons per annum. The Spanish tin mines have been known nearly as long as the Cornish ones. Tin was first discovered in Bohemia and Migssen in the 12th century. There are tin mines in Saxony, France, Sweden, and Siberia; also in Peru, Chili, Bolivia, and Mexico. Those in Mexico and South America were at work at the time of Cortez's invasion. The United States imported tin to the value of nearly $6,000,000 in 1860. It chiefly came from the Malay peninsula.

☞ The deepest deposit of guano known is seventy feet. According to Humboldt, a deposit of three centuries would not exceed more than one-third of an inch in thickness! By an easy mathematical calculation it will be seen that at this rate it would take almost countless centuries to form the deepest guano bed. Such a calculation carries us back towards a former geological period, and proves that in past ages a greater number of birds existed.

The manufacture of artificial fuel from consolidated coal-dust, although commercially unsuccessful in this country, has met with a very different result abroad. Twenty establishments in France produce yearly 500,000 tons. In Belgium seven manufacturers turn out 400,000 tons, while in other countries the product, though less, is very considerable.

☞ The number of practical miners constantly employed in the lead mines of Washington county, Ill., is eighteen or twenty, although as many as twenty-five at times have been engaged. The average of mineral taken is estimated at 55,000 lbs. gross per month. The percentage of yield is about 75.

☞ The *London Mining Journal* gives the following about Cornish pumping engines: The number reported for July is 23. They have consumed 1667 tons of coal, and lifted 12·0 million tons of water 10 fms. high. The average duty of the whole is, therefore, 52,600,000 lbs., lifted 1 ft. high, by the consumption of 112 lbs. of coal.

All Sorts.

☞ The most extraordinary experiments as to the power of destroying life possessed by the new *fusé* Chassepot have been made at Strasbourg by Dr. Sarazin. He got five dead bodies, and placed them at certain distances one from the other, and then fired. The result was that the orifice made by the ball as it entered the corpse was exactly the size of the projectile, whilst the orifice made by the ball as it passed out of the body was seven times, and in one instance even thirteen times, larger than that of the bullet. The arteries, veins, and muscles were smashed, and literally reduced to a sort of pulp. The bones were crushed to an immense extent all over the body, and the ball after having thus accomplished its deadly mission on the human frame pierced a two-inch board, and finally lodged in the wall behind. All this is very satisfactory, but one cannot help thinking, after perusing the details of this singular experiment, who the poor fellows had been whose fine corpses were thus torn to pieces. Supposing they died at a hospital, had they no wives or children? It is to be hoped that further information will be given to the public as to this gloomy experiment.

☞ The new principle of Mount Cenis Railway, is thus briefly explained to those who are not scientific and not initiated already into the mystery: The new principle, like all other great ones, is simple. A central rail, like a stair banister, is placed on strong supporters fourteen inches above the other rails. The engine is provided with four horizontally placed wheels, which are connected with the cylinders, and may be made to "bite" the centre rail. These wheels are clear on level ground, but when an ascent or descent is reached, they are screwed down and catch the centre rail, and off the locomotive goes up or down a plain sloped like a house roof. Passenger trains are now climbing the Alps every day and looking down on the world from a height of nearly seven thousand feet..

☞ To gain a name for excellence of workmanship, a name widely recognized in public as well as in the trade, is of immense value; but this often takes many years, and, however worthy the ambition of the true mechanic, the prospect is not one inviting the investment of capital with a view of early and extensive profit. There must be a novelty of some kind to start a business successfully, the novelty must be intrinsically good, and the engineer must know how to push it—for the best invention requires pushing—and he must know, too, how to keep it as much as possible in his own hands.

☞ In France some of the manufacturing establishments are very extensive. The Creusot Iron Works employ 10,000 people and produce annually 110,000 tons of iron. The "Commentry et Chatillon Forges Compagnie" employs 9,000 workmen, and has several forges in different parts of France, producing annually 70,000 tons of metals. "Petin, Caudet et Cie," a great steel manufacturing house, have six different establishments, employ 5,2 0 men, have steam engines aggregating 6,000 horse power, and produce annually 50,000 tons of iron and steel.

☞ The Aeronautical Society of Great Britain contemplate holding an exhibition in May, 1868, of machinery and apparatus relating to objects of an aeronautical character. There are several expensive designs for the accomplishment of aerial transit at this time under construction. It is proposed to offer a prize to any aeronaut starting from any part of continental Europe who shall reach England in a balloon nearest to a given point without replenishing his gas, at any time during the days of reception allowed for articles of exhibition.

LUECINIC ACID.—M. J. Hooper, in a communication to the *Chemical News*, points out that the presence of active acid or a soluble acitate, partially or entirely suspends the ordinary reaction of succinic acid in solutions of ferric salts. As this acid is frequently used by chemists for the quantitative determination of iron in solutions, and as acitates are but seldom employed for the purpose of removing free mineral acid, the above disturbance of the usual reaction should be borne in mind as a possible source of serious error.

☞ An English patent has just been issued for an invention for employing gaseous hydrochloric acid to work on a piston and to produce motion. The gas is evolved from its solution by means of sulphuric acid, and after it has done its work it is condensed by transmission through water, then, being liberated from the water by evaporation, it may be used over again any number of times. The parts of the apparatus with which the gas at any time comes in contact, must be made of, or coated with glass, to prevent corrosion.

☞ In the fiscal year 1863, (the first of the tax system), two hundred millions of cigars paid tax to the government. The following year nearly five hundred millions were returned for tax. During 1865, within a fraction of seven hundred millions paid duty, and in 1866, three hundred and fifty millions. Here is a grand total of one and three-quarter billions of this article for four years, and ten millions of duty.

☞ A famous French financier is said to have gained the first capital of which he made such active use by the simple expedient of annexing to the list of deaths which were chronicled in a local newspaper with which he was connected, the name of the medical attendant on the defunct. So intolerable, after a time, did the attention thus excited to the results of the practice of his prey become, that a large purse was made up to buy off the inconvenient chronicler.

☞ Mr. Ransome has made many grindstones from the artificial stone that bears his name, and they are found to be of a perfectly uniform quality, but wear faster than ordinary stones. By increasing the proportion of silicate of soda, and by some other unimportant changes in his process, this fault has been partially remedied.

☞ The extreme length of Nevada county, California, says the *Gazette*, is about sixty-five miles; breadth, twenty miles. Number of square miles, 1,200. The State of Rhode Island has 1,306 square miles—106 more than this county.

☞ A novel speculation is announced in Buenos Ayres, being nothing less than the opening of a "joint stock hospital." Subscribers who pay one dollar and twenty cents in silver as monthly dues, are to be admitted free in case of sickness or accident.

☞ The weight of a million of dollars in gold, currency, is 53,750 Troy ounces, or 4,479 pounds 2 ounces, equal to 2½ tons.

MISCELLANEOUS.

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3:6:qp-q J. B. McCREARY, President.

A MINING ENGINEER, A NATIVE OF SWEDEN, OF thirty eight years' experience, and having the best Swedish instruments, of well-known and tried value, and who has already discovered several mines in New Jersey, wishes a situation for exploring in the mining regions of New Jersey or Pennsylvania. Replies by letter may be made to V. A., at the office of this journal. Oct. 18:2t

A PRACTICAL MINER, who has had sixteen years experience in California, Nevada and Montana, both as owner and operator, desires the superintendence of a mine, or will go out to make reports on mining properties. Can furnish the best of references. Address
ALLEN HEALD, Office Journal of Mining,
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ARTESIAN AND PETROLEUM WELLS, from 9 inches to 3 feet in diameter, can be sunk through solid rock to a depth of 3,000 feet, and specimens of the rock from five inches to 1 foot long obtained of every strata. See the great Earth Boring Machine at 222 Pearl street, N. Y.
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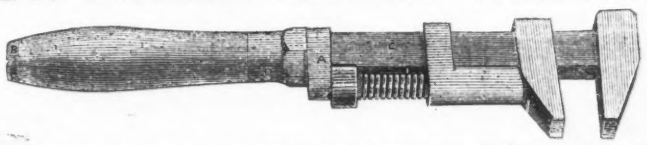

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FOR SALE.

VALUABLE GOLD QUARTZ PROPERTY FOR SALE

The undersigned desires to call the attention of capitalists to some QUARTZ PROPERTY, situated in

ABBEVILLE DISTRICT,

about Eight miles from Abbeville, South Carolina, that is, on the Dora Belt, about Eight miles from the CELEBRATED DORN MINE, in the same district. The property comprises THREE VEINS OF GOLD QUARTZ, upon one of which a shaft has been sunk 56 feet to water level. The yield of gold, from quartz taken from this shaft and from the three veins, (on the surface,) is shown by the following certificate of Assay:

OFFICE AMERICAN JOURNAL OF MINING, 37 Park Row, N. Y.
NEW YORK, October 7, 1867.

"J. A. TALLMADGE, ESQ.—Sir: The specimen of quartz, from Abbeville, South Carolina, submitted to us for assay, yields gold at the rate of $41 per ton of 2,000 lbs. avoirdupois, coin value. Respectfully,
(Signed) WESTERN & COMPANY.

Two hundred acres of the property is timbered, being but eight miles from Abbeville, to which point there is railroad communication. Such as would like to see the property, with a view to purchasing, would find a journey to it attended with little inconvenience. Letters may be addressed to
J. A. TALLMADGE, Abbeville, S. C.

☞ Specimens and a map of the property may be seen at the office of the AMERICAN JOURNAL OF MINING. oct12:4t

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FOR SALE my ONE-THIRD INTEREST in a tract of 4000 acres, with two steam Saw Mills now running, and lead deposits in course of development. Send for description and map. THOMAS ALLEN,
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ONE NO. 3 CONDIT & STEVENS, and ONE NO. 2 SEWELL & CAMERON
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One Portable Engine, new, 8 horse power, price $800; one 45 horse power Locomotive Boiler; one 4 horse, two 10 horse, two 12 horse power Upright Boilers; one 25 and one 12 horse; two Flue Boilers, one new five foot Blower, two 30 inch do., one Blower Engine, 12 by 12. W. S. FOOT & CO.,
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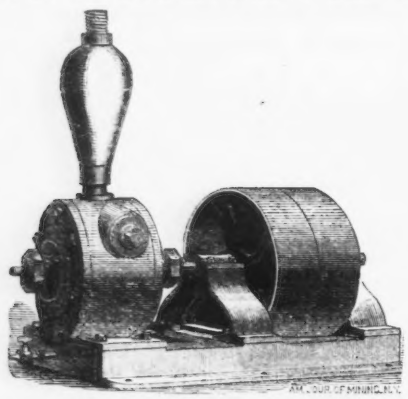

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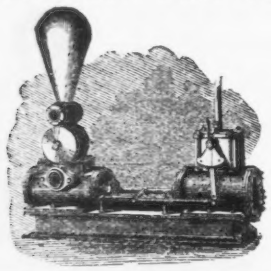

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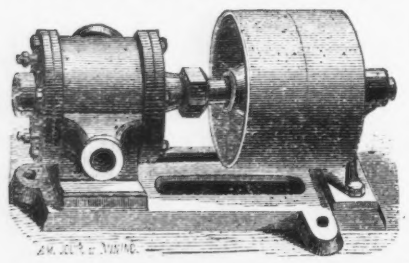

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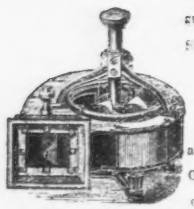

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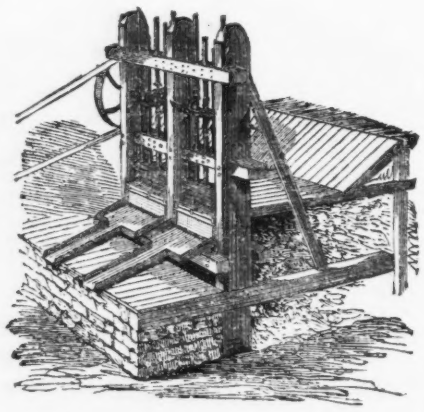

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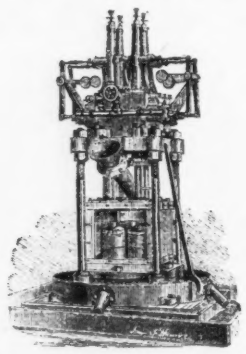

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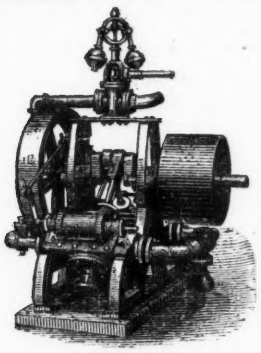

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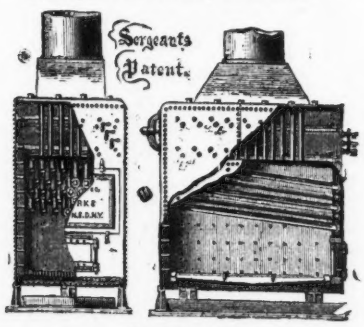

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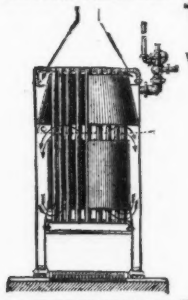

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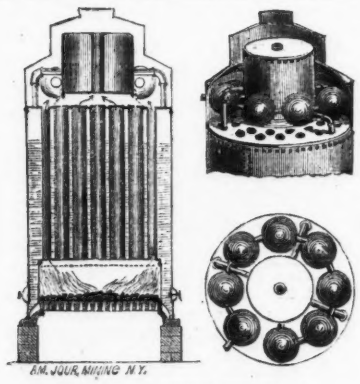

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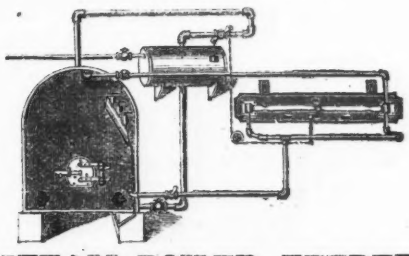

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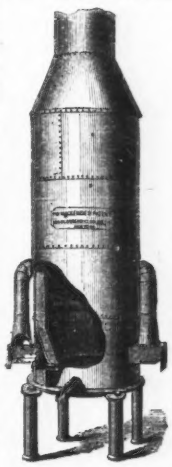

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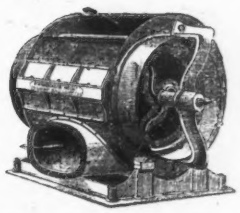

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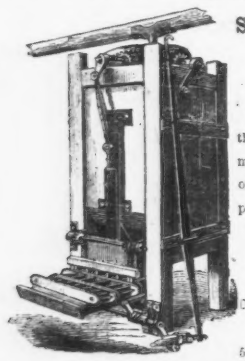

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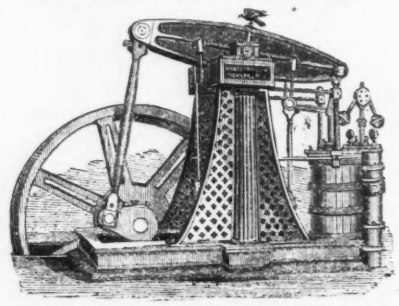

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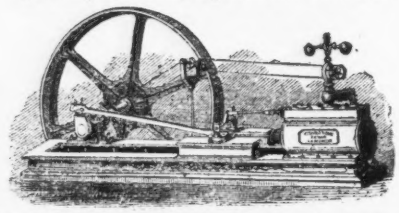

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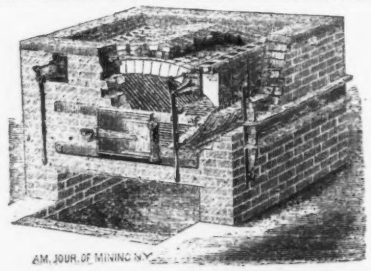

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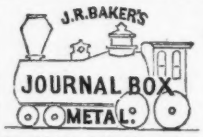

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